GOVERNMENT OF WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986 (WA)(CI)

Purpose Permit number:	CPS 4506/5
Permit Holder:	Phosphate Resources Limited trading as Christmas Island Phosphates
Duration of Permit:	From 16 March 2012 to 26 June 2034

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of phosphate mining, stockpile access, and exploration, subject to the following requirements:

(a) *Clearing* for phosphate mining is authorised within the following areas only, as shown as the combined areas cross-hatched yellow within Figure 1, Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6 of Schedule 1:

100-East MB4	106-STP18F	122-MB1	133-AF5MB4A
100-SPWMB1	106-MB6	125-STP10H	133-AF5MB5
100-EastMB5	106-15BMB1	125-STP10C	133-AF5MB6
101-MB1	106-MB4	125-STP10D	133-AF8MB1
101-MB2	106-STP18C	125-STP10E	133-AF9MB1
101-MB3	106-STP18G	132-MB5	135-MB1
102-STP13C	110-STP20J	132-MB4	136-MB2
102-MB1	117-STP23G2	132-MB6	138-MB4
102-STP13A	122-STP11K	133-AF5MB3	138-MB3
102-STP13B	122-F11STP11J	133-AF9MB2	139-STP25D
102-STP102F	122-F11STP11L	133-ASTP9B	139-STP26A
106-15AMB1	122-STP11M	133-AF5MB4	110-STP20R

(b) *Clearing* for stockpile access is authorised within following areas only, as shown cross-hatched yellow within Figure 7, Figure 8, Figure 9 and Figure 10 of Schedule 1:

106-STP106B	122-F11STP11E	139-STP25G
110-STP20KA	122-F11STP11F	139-STP25H
110-STP20Q	122-F11STP11H	

(c) *Clearing* for exploration is authorised within the following areas only, as shown cross-hatched yellow within Figure 11, Figure 12 and Figure 13 of Schedule 1:

105-MB1	106-MB8	116-MB4
106-MB5	106-MB9	140-MB2
106-MB7	116-MB3	

2. Land on which clearing is to be done - phosphate mining, stockpile access and exploration

The permit holder must only undertake *clearing* for phosphate mining, stockpile access and exploration with Mining Tenement MCA 70/1A, Christmas Island.

3. Land on which clearing is to be done – rehabilitation of relinquished areas

The permit holder is authorised to clear for the purpose of *rehabilitation* only within areas *relinquished* from Mining Tenement MCA 70/1A, Christmas Island.

4. Clearing authorised (extent)

The permit holder must:

(a) prior to 7 April 2027, not clear more than 30 hectares of *native vegetation*, within the combined areas cross-hatched yellow in Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 and Figure 13 of Schedule 1;

(b) from 7 April 2027, and subject to *CEO* approval, not clear more than 219.69 hectares of *native vegetation* within the combined areas cross-hatched yellow in Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 and Figure 13 of Schedule 1, inclusive of the 30-hectare *native vegetation clearing* limit referred to under *condition* 4(a);

(c) not clear any *native vegetation* beyond the extent specified under *condition* 4(a), unless approved by the *CEO*; and

(d) in requesting the *CEO*'s approval under *condition* 4(b) and/or *condition* 4(c), provide to the *CEO* all survey reports and available data that relates to giant gecko (*Cyrtodactylus sadleiri*) surveys commissioned by Phosphate Resources Limited.

5. Clearing not authorised

The permit holder must demarcate the areas approved to clear under this permit or otherwise put in appropriate controls prior to *clearing* and must not clear any *primary rainforest* under this permit.

6. Stockpile access

To facilitate future revegetation, within six months of undertaking the required *clearing* of the areas listed under *condition* 1(b), the permit holder shall return these areas to natural ground level where the *clearing* lies within 50 metres of the Christmas Island National Park.

7. Staged clearing

For the areas authorised to clear for phosphate mining under this permit in accordance with *condition* 1(a), the permit holder must commence phosphate mining activities within six (6) months of the *clearing* of these areas being undertaken, where practicable.

PART II – MANAGEMENT CONDITIONS

8. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the *clearing* of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of *clearing* on any environmental value.

9. Weed management

(a) When undertaking any *clearing*, or other activity under this permit, the permit holder must take the following steps to minimise the risk of the introduction and spread of weeds:

(i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(ii) ensure that no *weed*-affected *mulch*, *fill* or other material is brought into the area to be cleared; and

(iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

(b) Weed management activities must be undertaken by the permit holder in accordance with the *Environmental Management Plan*.

10. Fauna management - directional clearing and timing of clearing

The permit holder must:

(a) conduct *clearing* activities authorised under this permit in a slow, progressive manner, from one side of the *clearing* area to the other, towards adjacent *native vegetation*, to allow fauna to move into adjacent *native vegetation* ahead of the *clearing* activity; and

(b) restrict *clearing* activities to day-light hours to minimise the risk of injury to fauna.

11. Fauna management – robber crab (*Birgus latro*)

The permit holder must:

(a) engage a fauna spotter to traverse the areas cross-hatched yellow in Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 and Figure 13 of Schedule 1, to identify the robber crab immediately prior to, and for the duration of *clearing* activities; and

(b) where the robber crab is identified under *condition* 11(a), ensure the fauna spotter removes and relocates robber crabs to an area located 50 metres or more outside of the areas to be cleared, prior to commencing *clearing*.

12. Fauna management – Abbott's booby (*Papasula abbotti*)

The permit holder must:

(a) engage a *fauna specialist* to undertake a targeted survey of *Abbott's booby suitable habitat* within 60 days prior to *clearing*, for evidence of *Abbotts booby nest(s)*.

(b) where *Abbotts booby nest(s)* are identified under *condition* 12(a), or at any other time prior to *clearing*:

  (i) not clear within 50 metres of any *Abbotts booby nest(s)* under this permit, unless otherwise approved by the *CEO*

  (ii) undertake the following measures to facilitate timely revegetation within 100 metres of the *Abbotts booby nest(s)*:

    (A) ensure that at least 1 metre of soil profile remains on top of the pinnacle in areas that have been cleared and mined under this permit, excluding *legacy pinnacle / fern fields*, within six (6) months post completion of phosphate mining;

    (B) maintain vegetative material stockpiles from *clearing* activities under this permit within, or adjacent to the cleared areas, for use in rehabilitation;

    (C) provide the vegetative material referred to under *condition* 12(b)(i)(B) to *Parks Australia*; and

    (D) ensure that rehabilitation earthworks are commenced within 28 days of a work order being received from Parks Australia post relinquishment where safe and practicable.

(c) where *Abbotts booby nest(s)* are identified under *condition* 12(a), include the following in a report submitted to the *CEO*:

  (i) the number of nests identified;

  (ii) the date each nest was identified;

  (iii) the location where each nest was identified, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees;

  (iv) measures taken to provide a 50-metre buffer between any nest identified and *clearing* activities, unless otherwise approved by the *CEO* under *condition* 12(b); and

  (v) measures taken in accordance with *condition* 12(b)(ii).

(d) where *tall native vegetation* occurs in the area labelled 110-STP20J as shown cross-hatched yellow in Figure 5 of Schedule 1 within 100 metres of *historically recorded Abbotts booby nests*, engage a *fauna specialist* to risk assess the site for *wind turbulence* impacts to *Abbotts booby nest(s)*, and not clear *tall native vegetation* within 100 metres of an *Abbotts booby nest(s)* unless otherwise approved by the *CEO.*

(e) where *Abbotts booby nest(s)* within 100 metres of *tall native vegetation* are recorded under *condition* 12(d), include the following in a report submitted to the *CEO*:

  (i) the location where each nest was identified, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

  (ii) considerations and measures taken to provide a 100-metre buffer between *Abbotts booby nest(s)* and *tall native vegetation*, unless otherwise approved by the *CEO* under *condition* 12(d).

13. Fauna management – red-footed booby (*Sula sula*)

The permit holder must:

(a) engage a *fauna specialist* to undertake a survey of *red-footed booby suitable habitat* prior to *clearing*, for evidence of red-footed booby nesting; and

(b) where evidence of red-footed booby nesting is identified under *condition* 13(a), maintain a minimum avoidance buffer of 50 metres between any active red-footed booby nest site and any *clearing* activity authorised under this permit, unless otherwise approved by the *CEO*.

14. Fauna management – red crab (*Gecarcoidea natalis*)

Prior to undertaking any *clearing* authorised under this permit between 1 December and 28 February of each year, the permit holder must liaise with *Parks Australia* regarding agreed management measures to minimise the mortality to red crabs during migration and periods of high crab activity.

15. Clearing schedule and rehabilitation preparation – red crab (*Gecarcoidea natalis*) migration

In relation to the areas cross-hatched red in Figure 1 of Schedule 2, the permit holder must undertake the following actions to minimise long term impacts to red crab migration:

(a) undertake *clearing* in the staged order specified in Figure 1 of Schedule 3;

(b) at any one time, no more than one stage can be actively mined, as specified in Figure 1 of Schedule 3;

(c) mine to ground level for stockpile removal only, ensuring that at least one meter of soil profile remains;

(d) progressively relinquish each stage, as specified in Figure 1 of Schedule 3, back to the Commonwealth once mining activities have ceased; and

(e) within six months following the completion of mining activities in any given stage, as specified in Figure 1 of Schedule 3, undertake the following actions:

  (i) rip the site to remove soil compaction; and

  (ii) lay vegetative material on the ripped site.

16. Environmental values avoidance buffers

The permit holder must maintain a 5-metre avoidance buffer between the boundary of the Christmas Island National Park and any *clearing* undertaken under this permit.

17. Flora management - *Tectaria devexa* var. minor

The permit holder must:

(a) engage an *environmental specialist* to survey areas of *Tectaria devexa var. minor suitable habitat* prior to *clearing*;

(b) not clear within 10 metres of any known *Tectaria devexa* var. minor locations under this permit unless otherwise approved by the *CEO*;

(c) not clear within 50 metres of any known *Tectaria devexa* var. minor locations under this permit where the vegetation proposed to be cleared is *contiguous with* the patch of vegetation comprising the *Tectaria devexa* var. minor known locations, unless otherwise approved by the *CEO*.

(d) where *Tectaria devexa var. minor* is identified under *condition* 17(a), include the following in a report submitted to the *CEO*:

(i) the number of individuals identified;

(ii) the date each individual was identified;

(iii) the location where each individual was identified, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

(iv) measures taken to provide a 10-metre and 50-metre buffer between any individuals identified and *clearing* activities under this permit, unless otherwise approved by the *CEO* under *condition* 17(b) and *condition* 17(c), respectively.

18. Drainage management

The permit holder must not cause or allow the discharge of sediments from within the areas cross-hatched yellow in Figure 13 of Schedule 1, into the Dales Ramsar listed wetland.

PART III - RECORD KEEPING AND REPORTING

19. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised *clearing* activities generally	(a) the location where the *clearing* occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings; (b) the date that the area was cleared; (c) the size of the area cleared (in hectares); (d) the purpose of the *clearing* undertaken; (e) the location of areas authorised to clear under this permit that have been relinquished from Mining Tenement MCA 70/1A, using a GPS unit set to GDA 2020, expressing the geographical coordinates in Eastings and Northings; (f) the date that any areas authorised to clear under this permit were relinquished from Mining Tenement MCA 70/1A; (g) actions taken to avoid, minimise, and reduce the impacts and extent of *clearing* in accordance with *condition* 8; (h) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with *condition* 9; (i) actions taken in accordance with *conditions* 4, 5,

No.	Relevant matter	Specifications
		6, 7, 10, 11, 13, 14, 15 and 16; and (j) actions taken to manage and prevent drainage into the Dales, Ramsar listed wetlands in accordance with *condition* 18.
2.	In relation to fauna management (Abbott's booby) pursuant to *condition* 12	(a) results of the pre-clearance fauna survey undertaken in accordance with *condition* 12; and (b) a copy of the fauna report in accordance with *condition* 12(c) and *condition* 12(e).
3.	In relation to flora management pursuant to *condition* 17	(a) results of the pre-clearance flora survey undertaken in accordance with *condition* 17; and (b) a copy of the flora report in accordance with *condition* 17(d).

20. Reporting

(a) The permit holder must provide to the *CEO* on or before 30 June of each year, a written report containing:

(i) the records required under *condition* 19; and

(ii) records of activities done by the permit holder under this permit between 1 January and 31 December of the preceding calendar year.

(b) If no *clearing* authorised under this permit has been undertaken, a written report confirming that no *clearing* under this permit has been carried out, must be provided to the *CEO* on or before 31 December of each calendar year.

(c) The permit holder must provide to the *CEO*, no later than 90 calendar days prior to the expiry date of this permit, a written report of records required under *condition* 19, where these records have not already been provided under *condition* 20(a).

DEFINITIONS

In this permit, the terms in Table 2 below have the meanings defined.

Table 2: Definitions

Term	Definition
Abbott's booby suitable habitat	means vegetation within, or within 100 metres of, the areas cross-hatched yellow in Figures 1 to 13 of Schedule 1, that provides suitable habitat for Abbott's booby nesting, as described in the 'Conservation Advice for Abbott's Booby – *Papasula abbotti'* Commonwealth of Australia, 2020.
Abbott's booby nest(s)	means any currently existing Abbotts booby (*Papasula abbotti*) nest(s).
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the EP Act.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.

Term	Definition
contiguous with	means vegetation that is joined to vegetation within the area approved to clear under this permit, without separation of a road or other substantial access track or infrastructure.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
environmental management plan	means the plan titled 'Christmas Island Phosphates Environmental Management Plan 2018-2023 (December 2017)', or any updated version of this plan as approved by the relevant Commonwealth department.
EP Act	*Environmental Protection Act 1986* (WA)(CI).
fauna specialist	means a person who has appropriate training in fauna identification and surveys of fauna native to Christmas Island, or who is approved by the *CEO* as a suitable fauna specialist.
fill	means material used to increase the ground level, or to fill a depression.
legacy pinnacle / fern fields	areas mined but with some soil remaining and small soft pinnacles if any, sometimes with dense beds of the fern *Nephrolepsis*. Generally, poor regrowth.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
Parks Australia	means the Commonwealth Parks Australia corporation, established under the *Environment Protection and Biodiversity Conservation Act 1999*.
historically recorded Abbotts booby nests	means Abbotts booby (*Papasula abbotti*) nests that have been historically recorded in Christmas Island surveys undertaken by Parks Australia or Range to Reef Environmental, between 2002 and 2020.
primary rainforest	means undisturbed closed canopy evergreen forest, as referenced in the document titled 'Supporting document for Amendment to CPS 4506/3. Christmas Island Phosphates. November 2024'.
tall native vegetation	means any *native vegetation* that is 20 metres high or taller that occurs within the area labelled 110-STP20J as shown cross-hatched yellow in Figure 5 of Schedule 1
Tectaria devexa var. minor suitable habitat	means vegetation within, or within 50 metres of, the area labelled 100-SPWMB1, as shown cross-hatched yellow in Figure 4 of Schedule 1, that provides suitable habitat for flora species *Tectaria devexa* var. minor, as described in the document titled 'Supporting document for Amendment to CPS 4506/3. Christmas Island Phosphates. November 2024'.
red-footed booby suitable habitat	means vegetation within, or within 50 metres of, the areas labelled '133A-STP9B' and '100-EastMB5' as shown cross-hatched yellow in Figures 2 and 4 of Schedule 1 respectively, that provides suitable habitat for red-footed booby (*Sula sula*) nesting, as described within the Commonwealth Species Profile and Threats Database for this species, as updated from time to time.
rehabilitation	means the undertaking of activities to facilitate rehabilitation within

Term	Definition
	relinquished areas and includes the establishment and maintenance of roads and tracks to allow access to and from relinquished areas.
relinquished	means areas relinquished by the permit holder to the Department of Infrastructure, Transport, Regional Development and Communications, Sports and the Arts (or future versions of this department).
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) referred to as a weed in the document titled 'Christmas Island Phosphates Weed Management. Approaches and Risk Reduction in Mining Areas of Christmas Island (January, 2017); or (c) not indigenous to the area concerned.
wind turbulence	refers to persistent wind impacts on Abbotts booby nests likely to have a negative impact on the success of breeding and survivability of Abbotts booby chicks, as assessed by a *fauna specialist*.

END OF CONDITIONS

Meenu Vitarana
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986 (WA)(CI)

7 October 2025

Schedule 1

The boundary of the areas authorised to be cleared for phosphate mining in accordance with *condition* 1(a) and *condition* 3 are shown in the maps below (Figures 1 to 6).

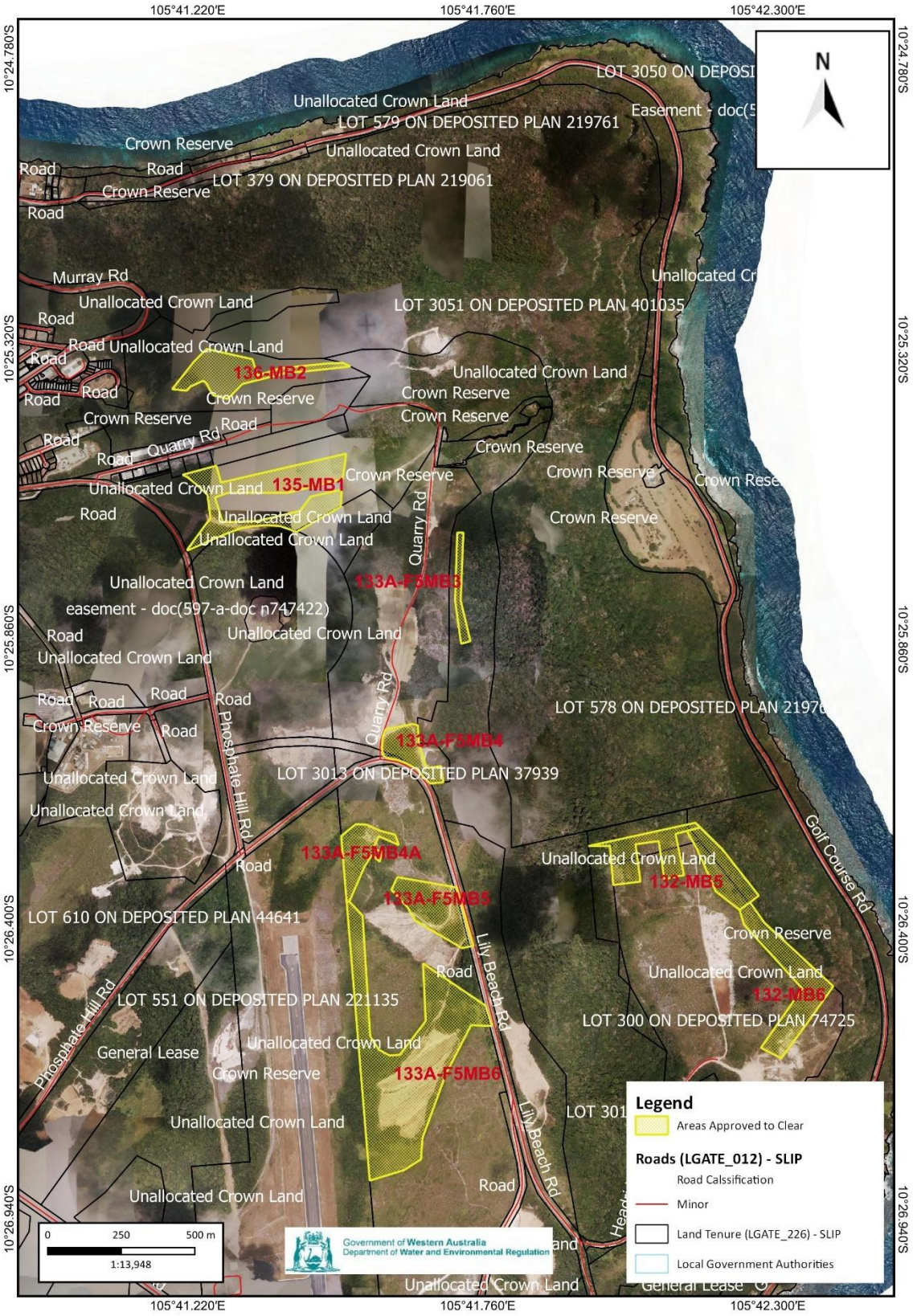

Figure 1: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

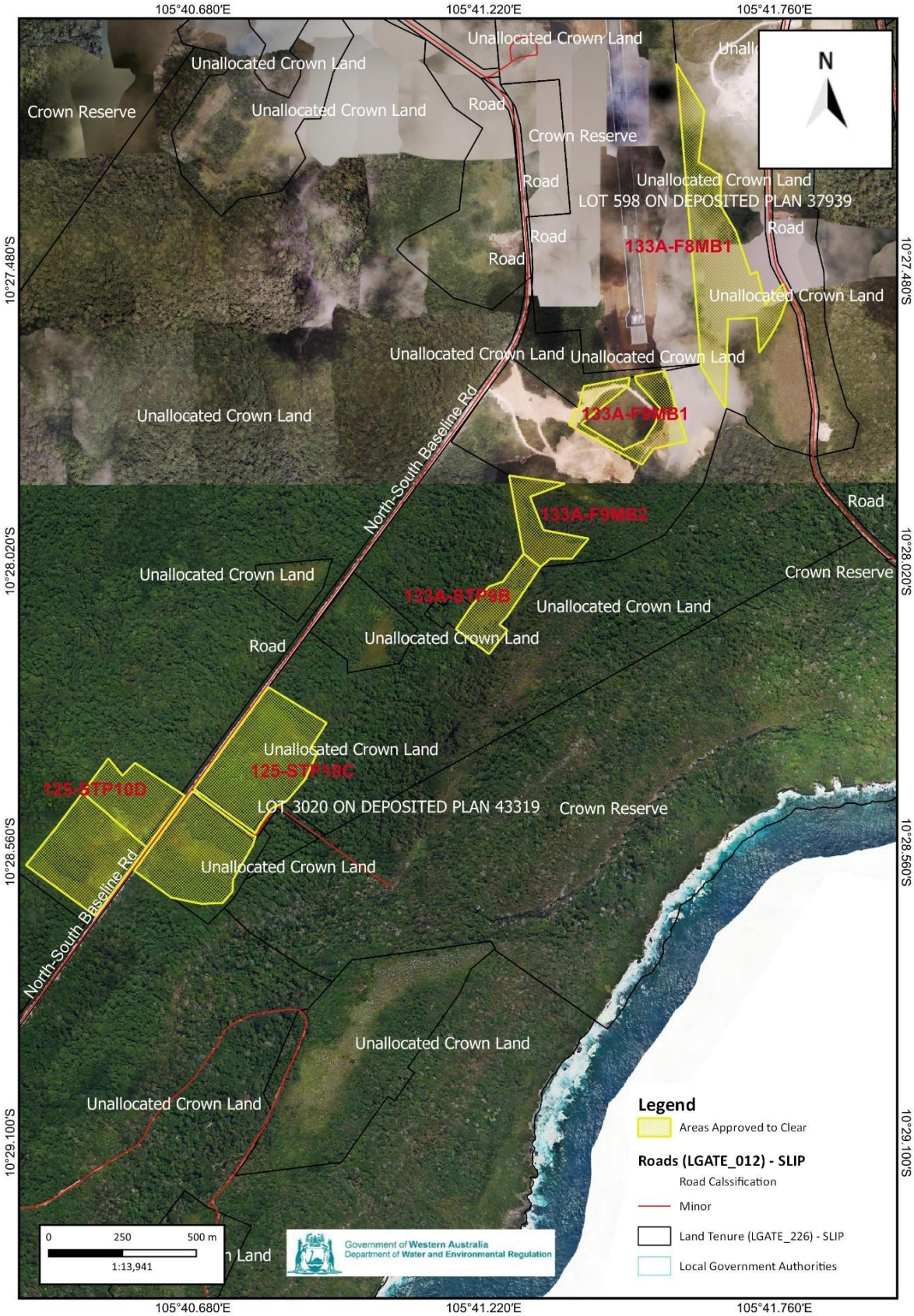

Figure 2: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

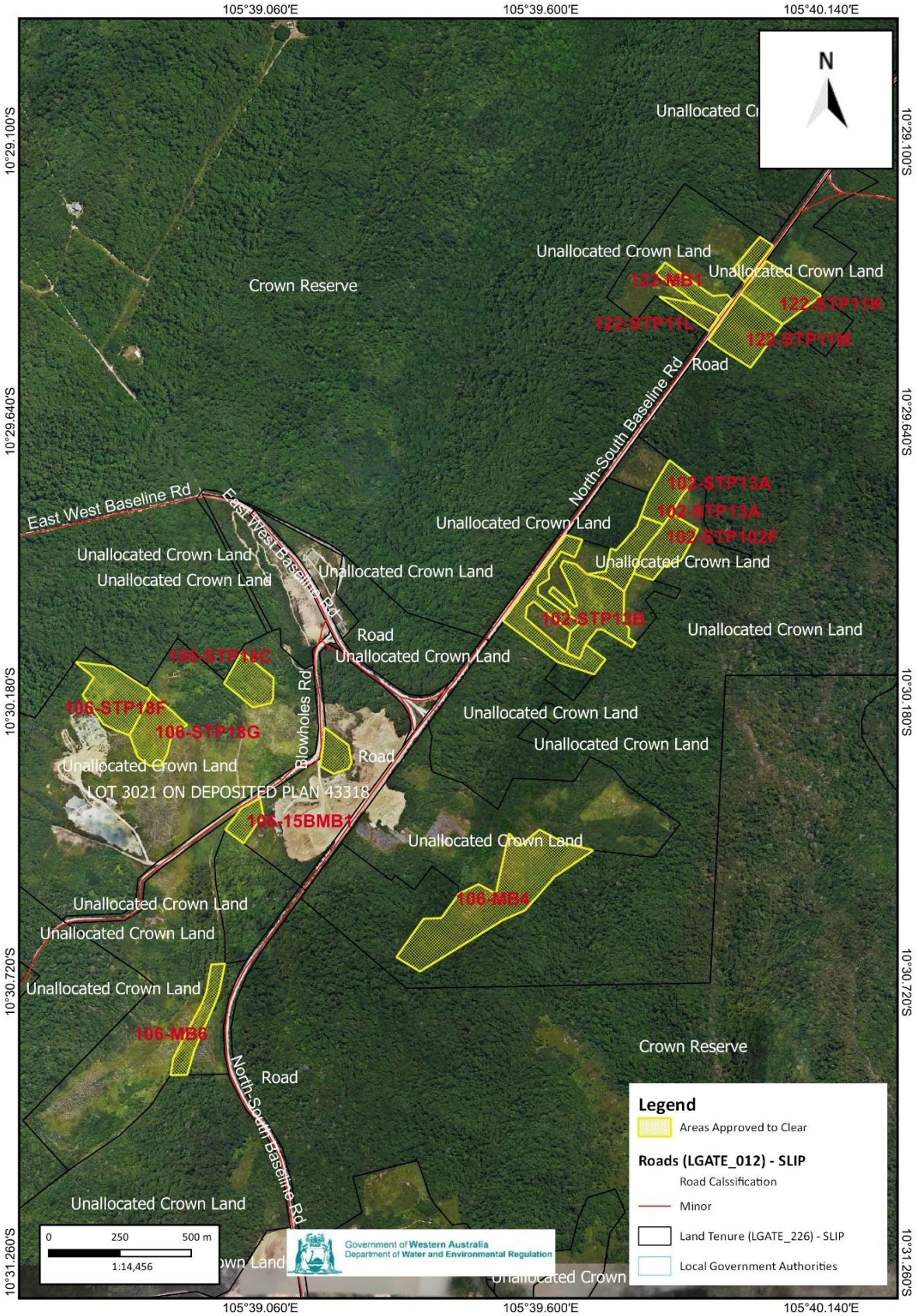

Figure 3: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

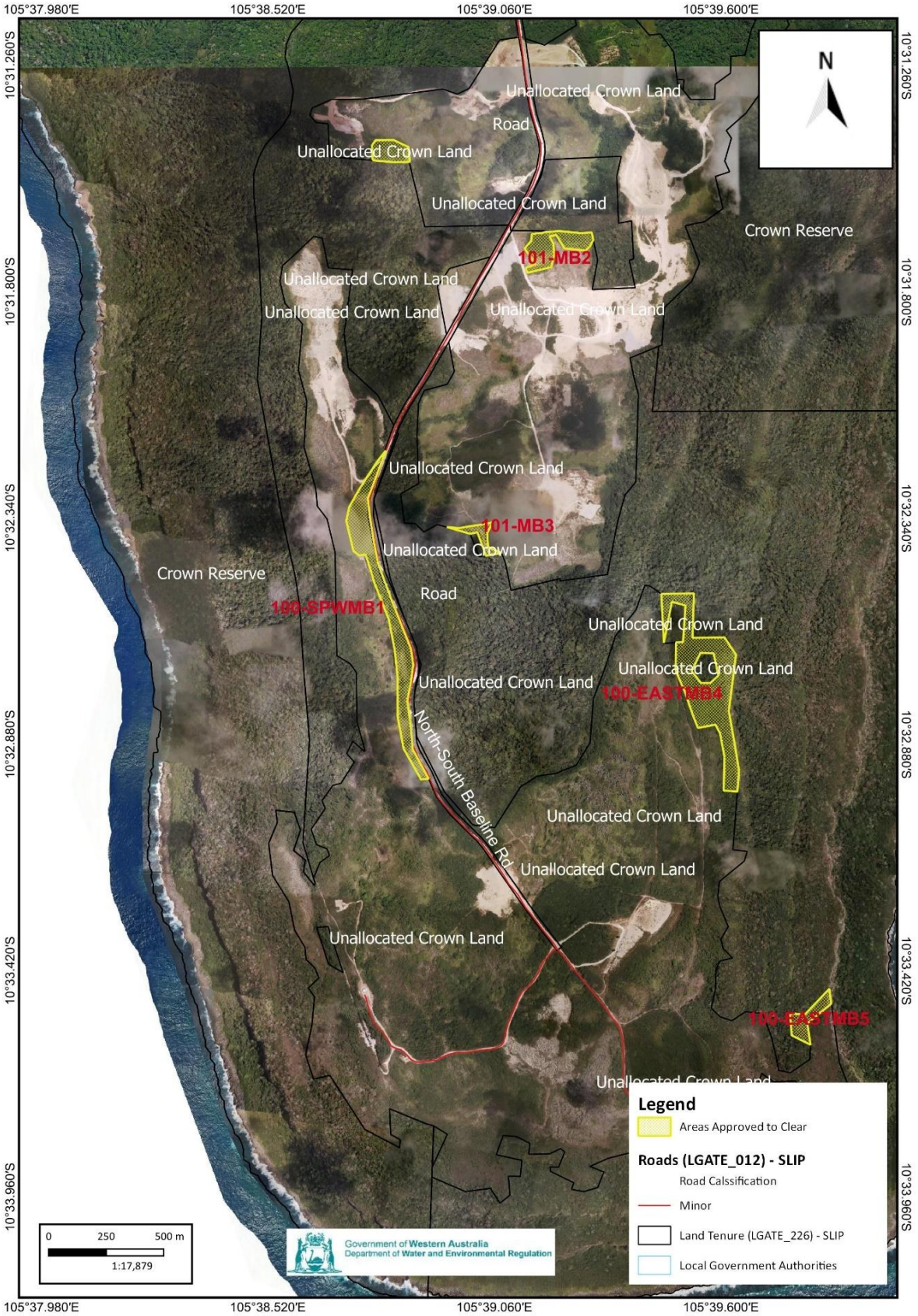

Figure 4: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

Figure 5: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

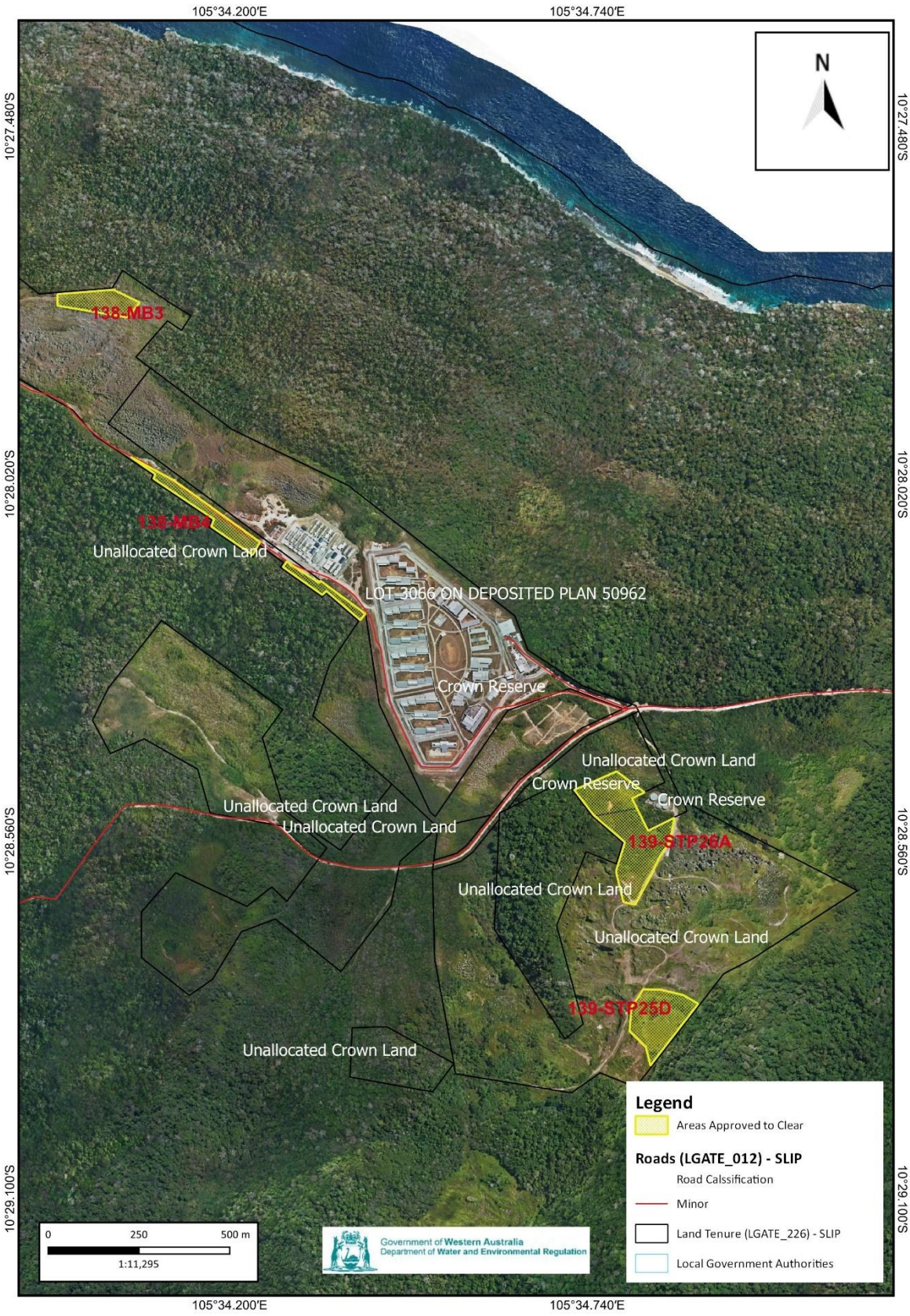

Figure 6: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for phosphate mining.

The boundary of the areas authorised to be cleared for stockpile access in accordance with *condition* 1(b) and *condition* 3 are shown in the maps below (Figures 7 to 10).

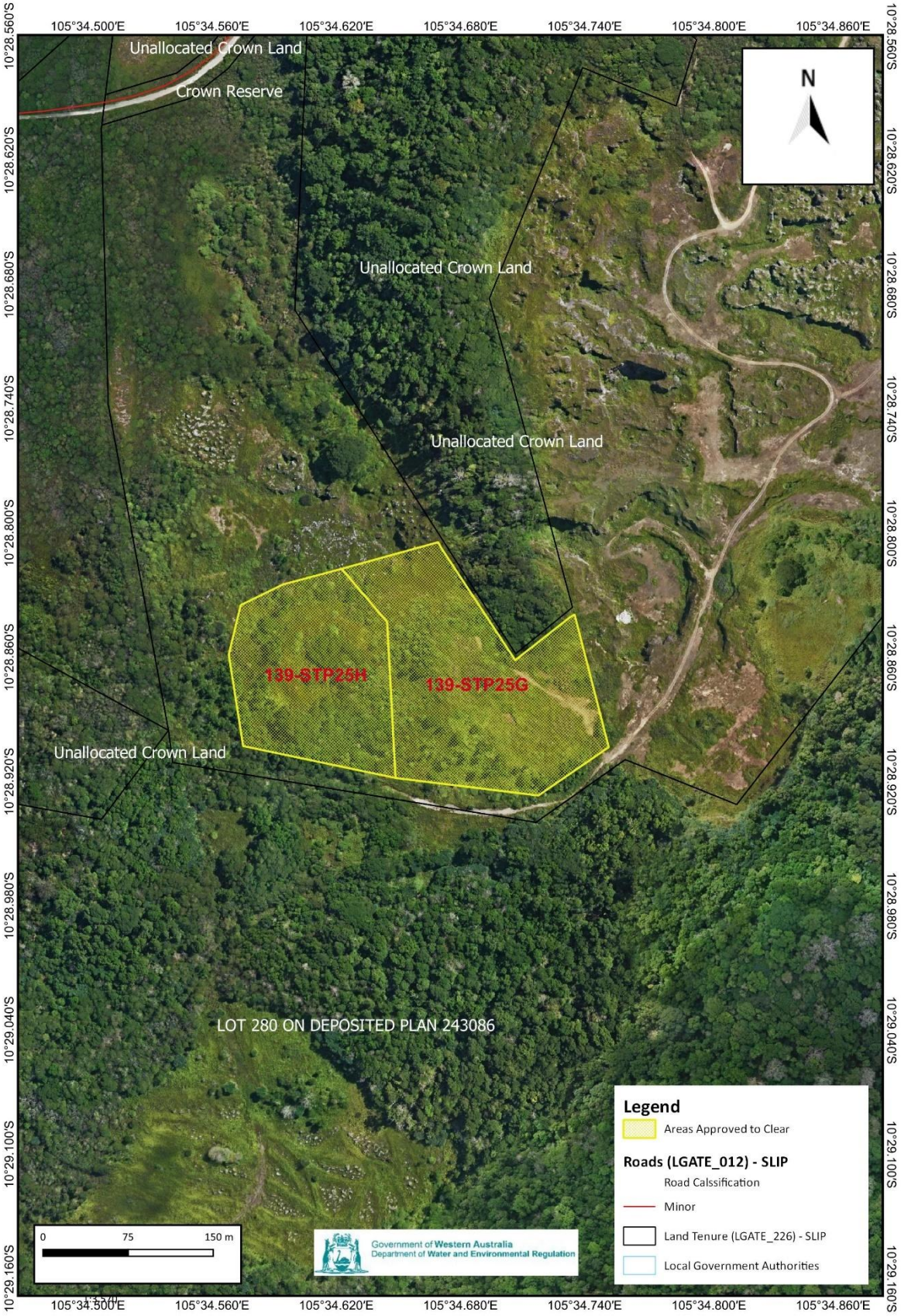

Figure 7: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for stockpile access.

Figure 8: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for stockpile access.

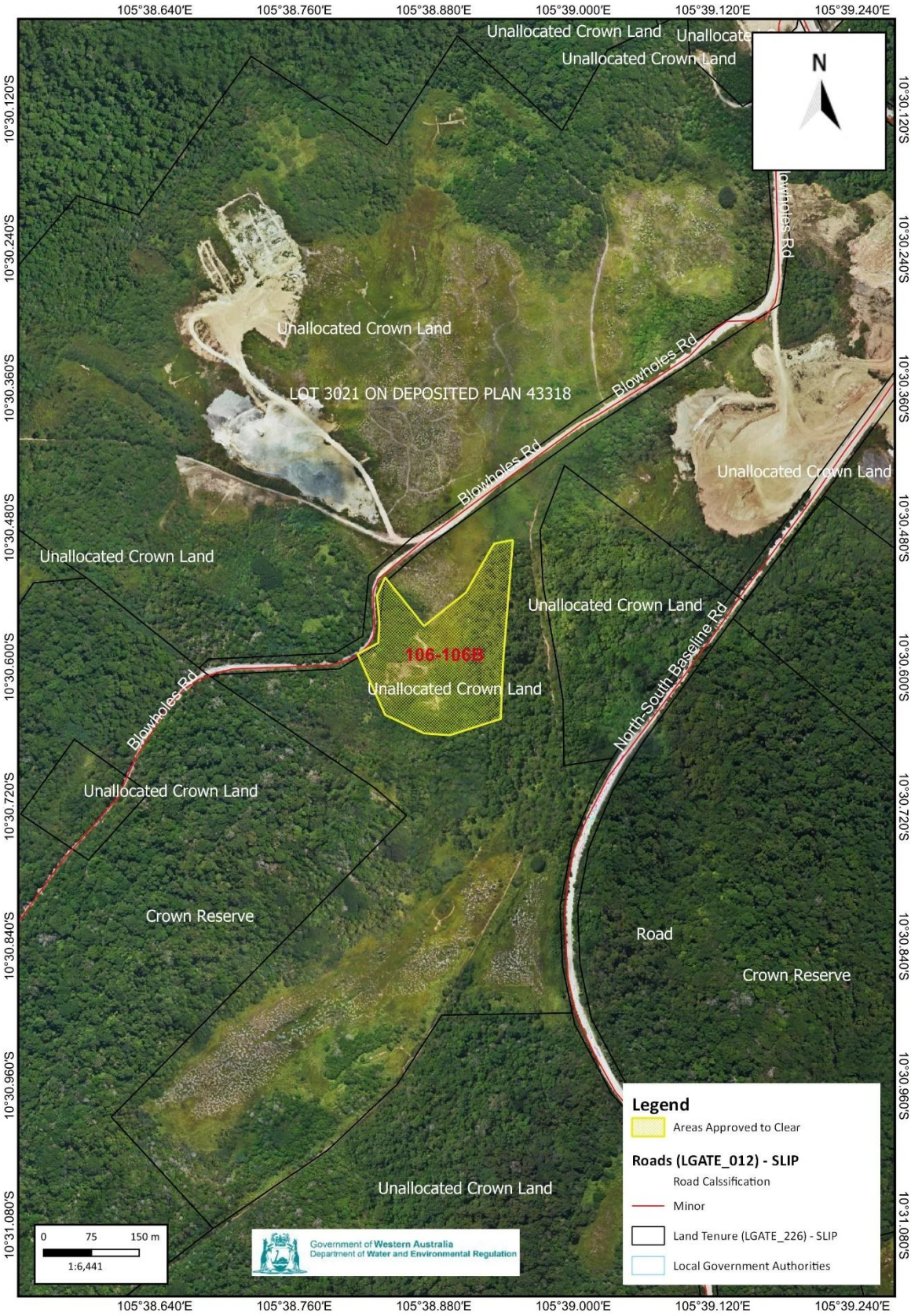

Figure 9: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for stockpile access.

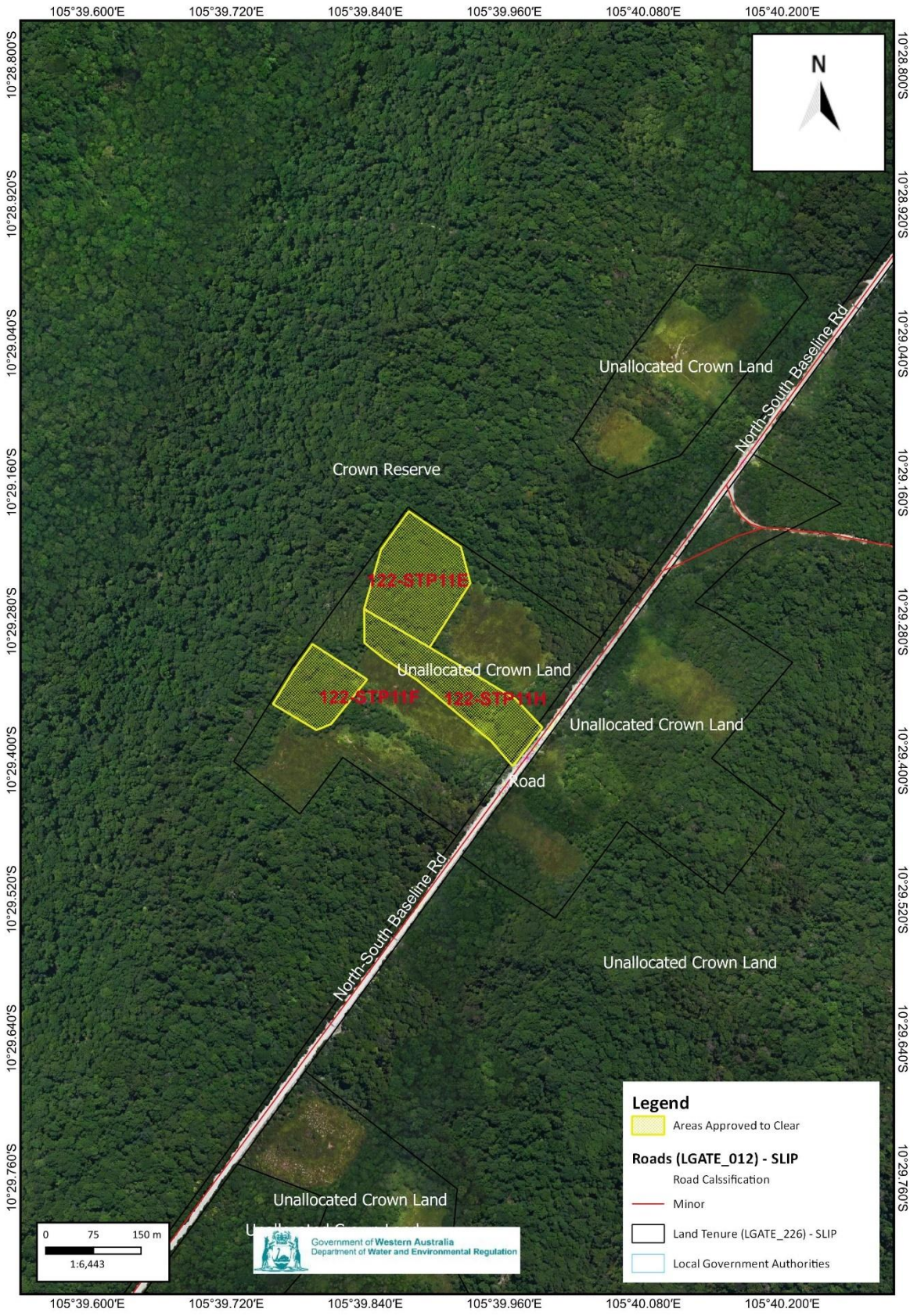

Figure 10: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for stockpile access.

The boundary of the areas authorised to be cleared for exploration in accordance with *condition* 1(c) and *condition* 3 are shown in the maps below (Figures 11 to 13).

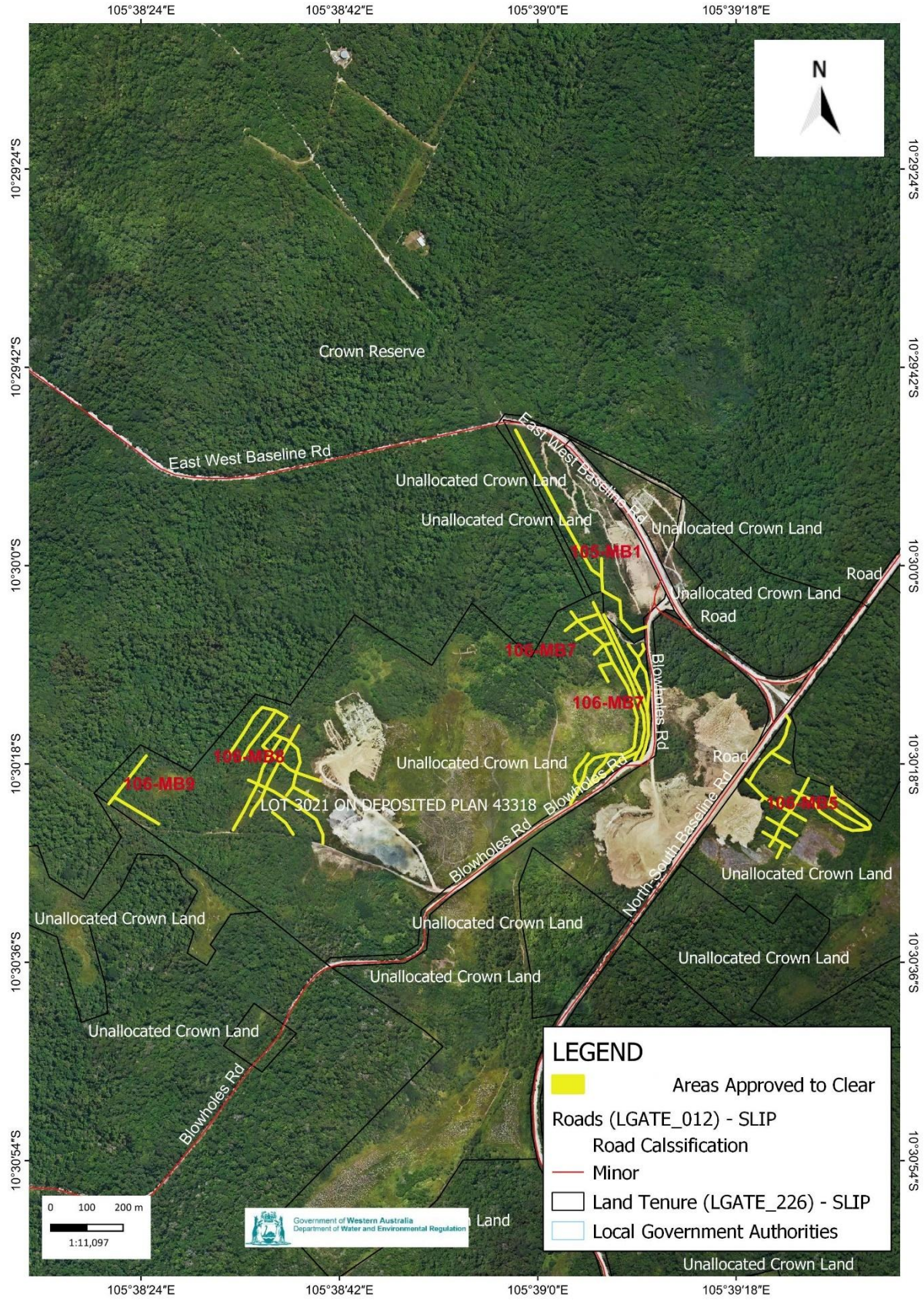

Figure 11: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for exploration.

Figure 12: Map of the boundary of the area**s** within which *clearing* may occur (cross-hatched yellow) for exploration.

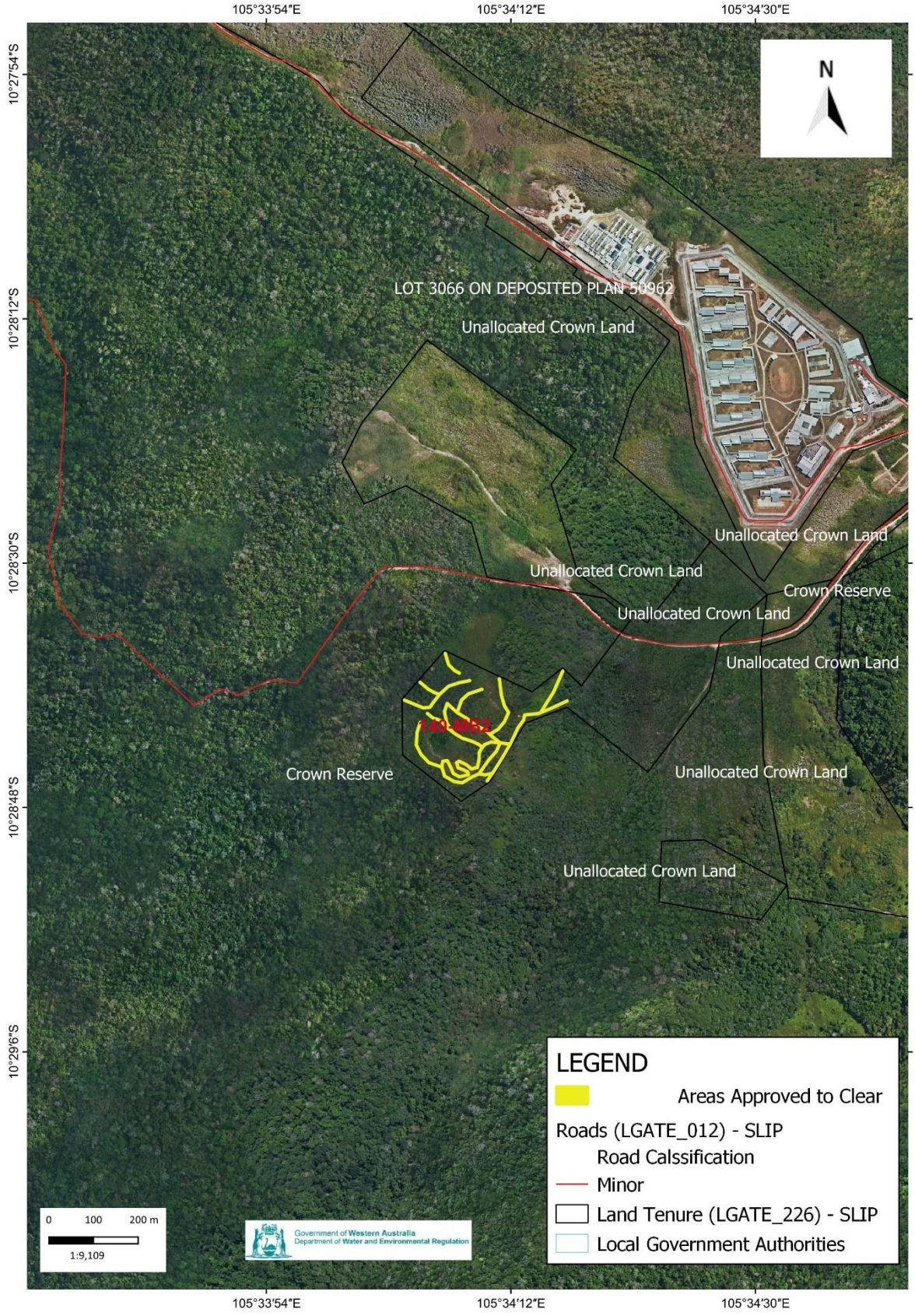

Figure 13: Map of the boundary of the areas within which *clearing* may occur (cross-hatched yellow) for exploration.

Schedule 2

The boundary of the areas subject to staged *clearing* requirements in accordance with *condition* 15, are shown in Figure 1 below.

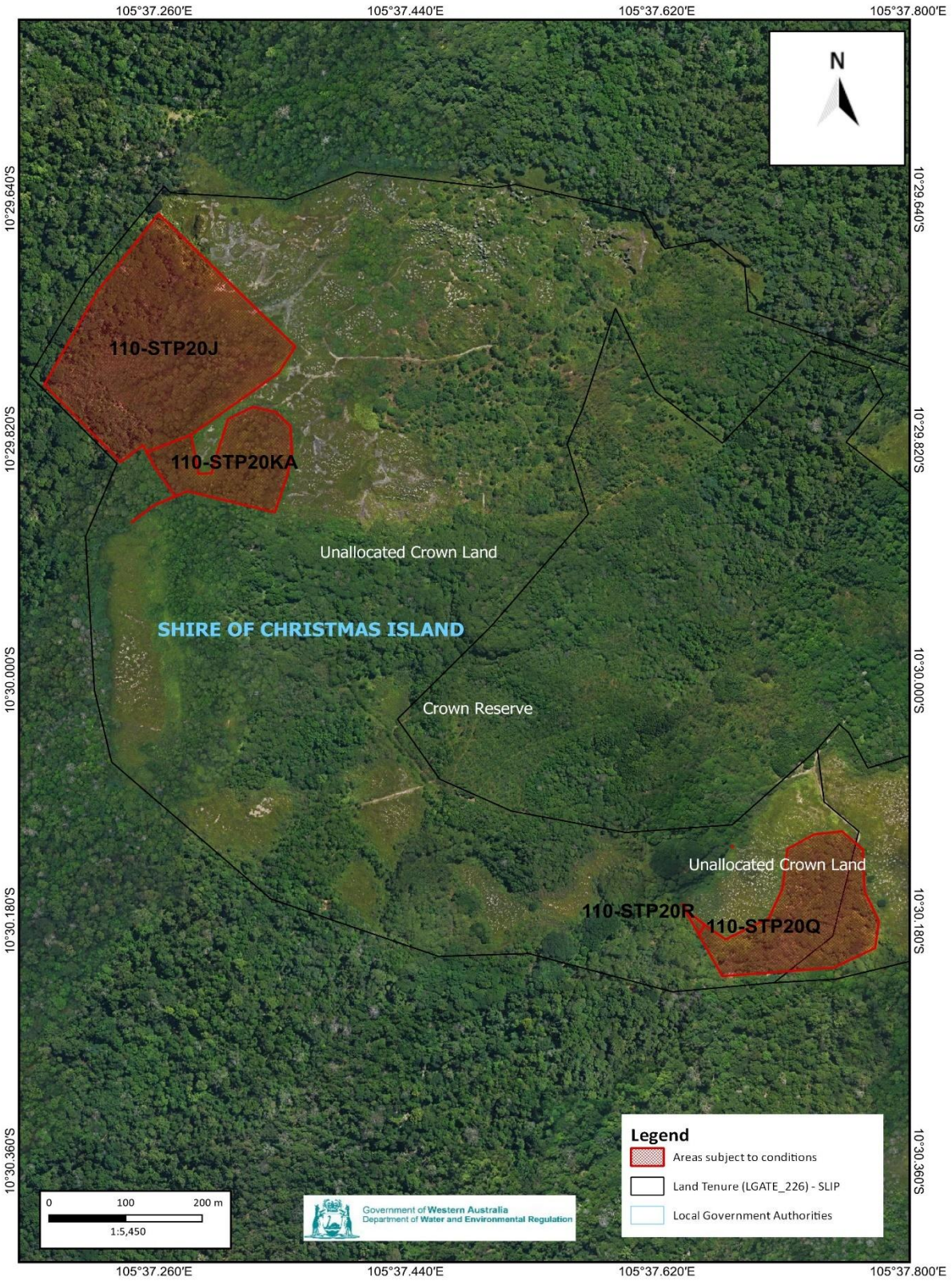

Figure 1. Map of the boundary of the area**s** subject to *condition* 15.

Schedule 3

The staged *clearing* schedule, including areas 110-STP20J, 110-STP20KA and 110-STP20Q, required to be adhered to in accordance with *condition* 15.

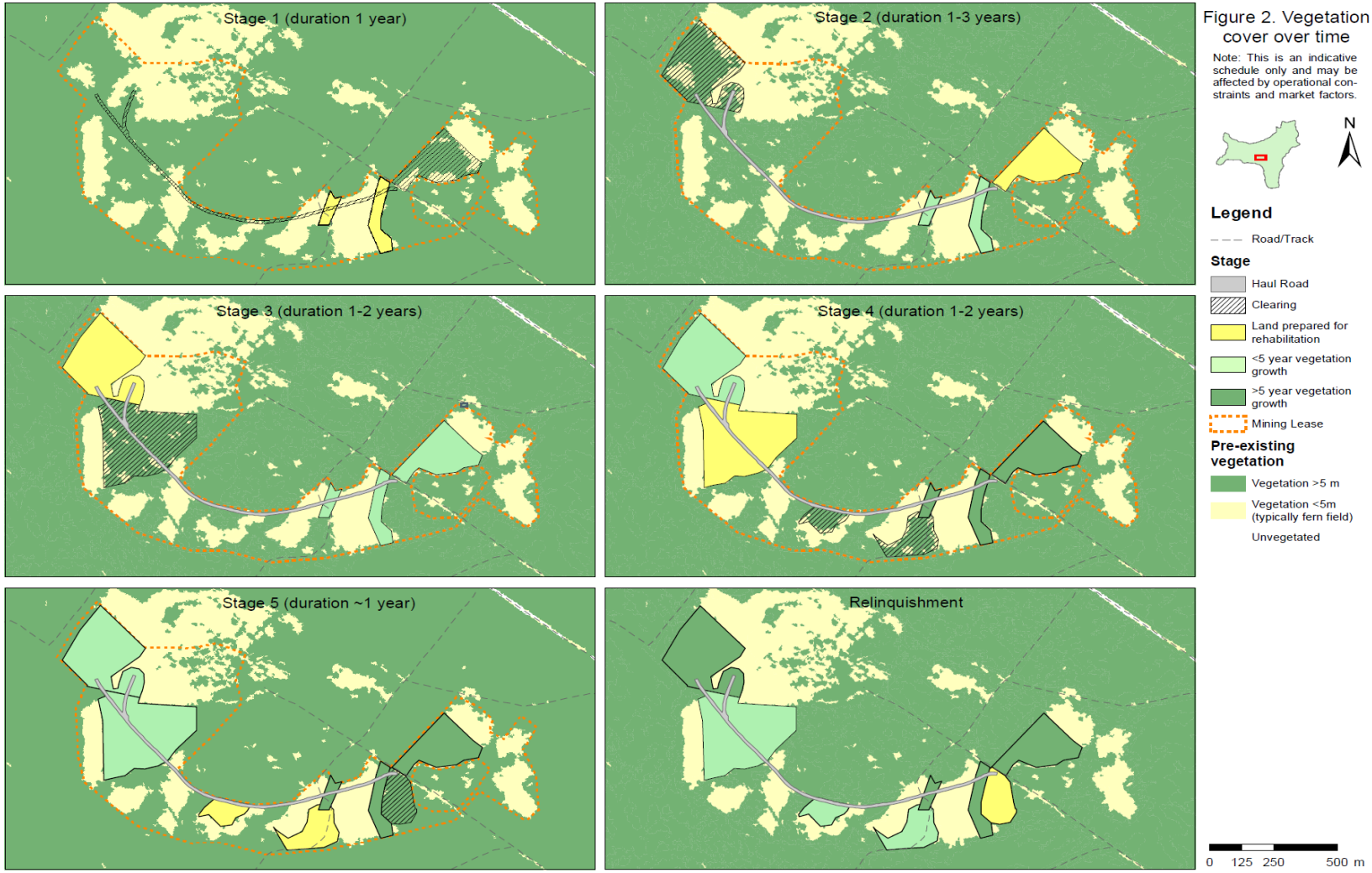

Figure 1. Staged *clearing* schedule subject to *condition* 15.

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Amendment Decision Report

1 Application details and outcome

1.1. Amendment application details

Permit number:	CPS 4506/5
Permit type:	Purpose permit
Applicant name:	Phosphate Resources Limited
Amendment Application received:	30 June 2025
Application areas:	219.69 hectares of native vegetation
Purpose of clearing:	Phosphate mining, stockpile access and exploration
Method of clearing:	Mechanical
Property:	Mining Lease - MC1 70/1A Christmas Island
Location (LGA area/s):	Shire of Christmas Island
Localities (suburb/s):	Christmas Island

1.2. Description of the amendment

The original clearing permit, CPS 4506/1, allowed for the clearing of up to 222.61 hectares of native vegetation across 64 areas on Christmas Island to allow for phosphate mining, stockpile access and exploration, subject to conditions. Since the original permit was granted, three further amendments were undertaken on the clearing permit:

- CPS 4506/2 - granted 28 July 2017, to extend the duration of the clearing permit
- CPS 4506/3 - granted 1 May 2019, to reduce the area of proposed clearing by 2.92 hectares to provide a vegetated corridor for migrating red crabs (*Gecarcoidea natalis*)
- CPS 4506/4 – granted 14 March 2025, to temporarily extend the permit duration to allow the applicant additional time to provide comment on contemporised draft clearing permit conditions, without the permit expiring.

Regarding CPS 4506/4, DWER provided the applicant with proposed contemporised draft clearing permit conditions for comment on 5 March 2025. Noting that Clearing Permit CPS 4506/3 was due to expire on 16 March 2025, the applicant requested that DWER temporarily amend the permit to allow the applicant additional time to better consider the proposed conditions and provide comment, without the permit expiring. DWER subsequently amended the permit and issued Clearing Permit CPS 4506/4 to extend the duration of the permit by two years until 16 March 2027. DWER included a condition on the permit which ensured that no clearing could occur post the initially expiry date of CPS 4506/3 (being 16 March 2025). The applicant has since had more time to consider the proposed contemporised conditions, and has provided its comments, which have been considered by DWER.

Therefore, this amendment application is largely to (Christmas Island Phosphates (CIP), 2024):

- extend the duration of the permit until 26 June 2034, to align with the expiry of the current approved mining lease MC1 70/1A (mining lease), which exists over the application areas
- remove conditions relating to managing impacts to the Christmas Island Pipistrelle (*Pipistrellus murrayi*)) which are no longer relevant to the proposed clearing, noting this species was declared extinct in 2021 (further information provided in Section 3.2.1)

- revise a condition relating to threatened flora buffers to allow the applicant to request formal approval from DWER to encroach on buffers in specific instances, such as when a road clearly separates the application area from a vegetative patch containing threatened flora
- contemporise the clearing permit conditions, with consideration of the applicant's comments.

The applicant has either not commenced or completed its mining activities within several of the application areas and has cleared 24 hectares of the 219.69 hectares approved for clearing to date (CIP, 2024).

The vegetation proposed to be cleared is shown in Figures 1 to 14 within Section 1.5.

1.3. Decision on application

Decision:	Granted
Decision date:	7 October 2025
Decision area:	219.69 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit amendment application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (WA)(CI)(EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 7 days and no submissions were received.

In making this decision, the Delegated Officer had regard for:

- the site characteristics (see Appendix A)
- relevant datasets (see Appendix D)
- supporting information provided by the applicant, including a field reconnaissance survey by Christmas Island Environmental Services and photographs of the application areas (CIP, 2024)
- the clearing principles set out in Schedule 5 of the EP Act (see Appendix B)
- that the amendment does not propose to undertake additional clearing beyond that previously approved
- that the application area is within the confines of the applicants mining lease, which is valid until 2034
- that the proposed phosphate mining occurs within areas that have been historically used, periodically, for phosphate mining at some point over the last 30 years
- relevant planning instruments and other matters relevant to the assessment (see Section 3.3).

Noting the time between the original assessment of CPS 4506/1 (granted in 2012) and the current amendment application, DWER has deemed it appropriate to undertake a re-assessment of the proposed clearing in this instance.

The assessment identified that the proposed clearing would result in:

- potential impacts to red-footed booby (*Sula sula*) nesting habitat through direct disturbance and noise
- potential impacts to Abbott's booby's (*Papasula abbotti*) nesting habitat through direct disturbance, noise, and edge effects
- a risk of injury / mortality to native fauna during clearing operations, including the robber crab (*Birgus latro*), red crab (*Gecarcoidea natalis*) and giant gecko (*Cyrtodactylus sadleiri*)
- potential impacts to threatened flora species *Tectaria devexa* var. minor
- the potential introduction and/or spread of weeds into adjacent conservation areas and primary rainforest, including the Christmas Island National Park and Dales and Hosnies Spring Ramsar listed wetlands, which could impact on the quality of the adjacent vegetation and its habitat values
- potential sedimentation of watercourses within the Dales Ramsar site
- impacts to an important red crab migration route

The Delegated Officer has considered the available supporting information, the applicant's minimisation and mitigation measures (see Section 3.1), that the proposed amendment would not result in additional clearing to that originally approved, the extent of proposed impact, and the consistency of the project with the current mining lease over the application area.

Based on the above information, the Delegated Officer determined that on balance it was appropriate to grant the amended clearing permit subject to contemporised management conditions which align with current practice. These management conditions will ensure an acceptable environmental outcome is achieved.

The Delegated Officer therefore decided to amend the clearing permit subject to conditions requiring the applicant to:

- avoid, minimise and reduce the impacts and extent of clearing
- clear no more than 30 hectares within 18 months of the amendment being granted and seek approval from DWER's CEO prior to clearing the remaining areas up to the 219.69 hectares proposed. This will allow DWER to consider island wide giant gecko survey findings (surveys in progress), and manage through conditions (if necessary), any realised significant impacts to individuals from fauna strike associated with the larger clearing
- return areas cleared for stockpile access to natural ground level within six months of clearing within 50 metres of the Christmas Island National Park to facilitate revegetation and limit edge effects
- take hygiene steps to minimise the risk of the introduction and spread of weeds
- undertake weed management activities in accordance with the applicants approved Environmental Management Plan (EMP)
- demarcate the proposed clearing areas prior to clearing and not clear any primary rainforest
- ensure mining activities commence within six months of clearing, where practicable, to lessen the time that areas are left bare prior to mining, maximising the time over which fauna habitat is available
- undertake slow, progressive one directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity
- not undertake clearing during night-time hours when many fauna species are more active
- undertake pre-clearance searches within suitable habitat for Abbott's booby (*Papasula abbotti*) nests within 100 metres of the application area, and avoid, with a 50-metre buffer, any Abbott's booby nests identified
- undertake site preparation works to facilitate future timely rehabilitation, where clearing occurs within 100 metres of an Abbott's booby nest, to minimise the risk of long-term edge effects to significant habitat for this species
- not clear tall regrowth vegetation in the 110-STP20J application area, where that vegetation occurs within 100 metres upwind of known Abbotts booby nest sites, to reduce wind turbulence
- undertake pre-clearance searches within suitable habitat for red-footed booby (*Sula sula*) nests within 50 metres of areas 100-EastMB5 and 133A-STP9B (where this species was previously identified), and avoid, with a 50-metre buffer, any red-footed booby nests identified
- engage a fauna spotter to remove (if necessary) and relocate robber crabs (*Birgus latro*) from the application areas ahead of clearing
- require actions regarding staged clearing and rehabilitation site preparation for the application areas shown in Figure 15, to minimise the long-term impact of the proposed clearing on a red crab (*Gecarcoidea natalis*) migration route
- liaise with Parks Australia to implement management measures to minimise crab mortality, prior to clearing during the red crab migration period
- maintain a minimum avoidance buffer of five metres to Christmas Island National Park and by virtue, the Dales and Hosnies Spring Ramsar listed wetlands
- undertake a pre-clearance search of suitable habitat within the 100-SPWMB1 application area for *Tectaria devexa* var. minor, and maintain a minimum avoidance buffer of (unless otherwise approved by the CEO):
    - 10 metres to all known locations
    - 50 metres to known locations where the vegetation proposed for clearing is contiguous with the vegetation comprising *Tectaria devexa* var. minor.
- undertake drainage management to prevent the inadvertent discharge of sediment into The Dales wetland.

1.5. Site maps

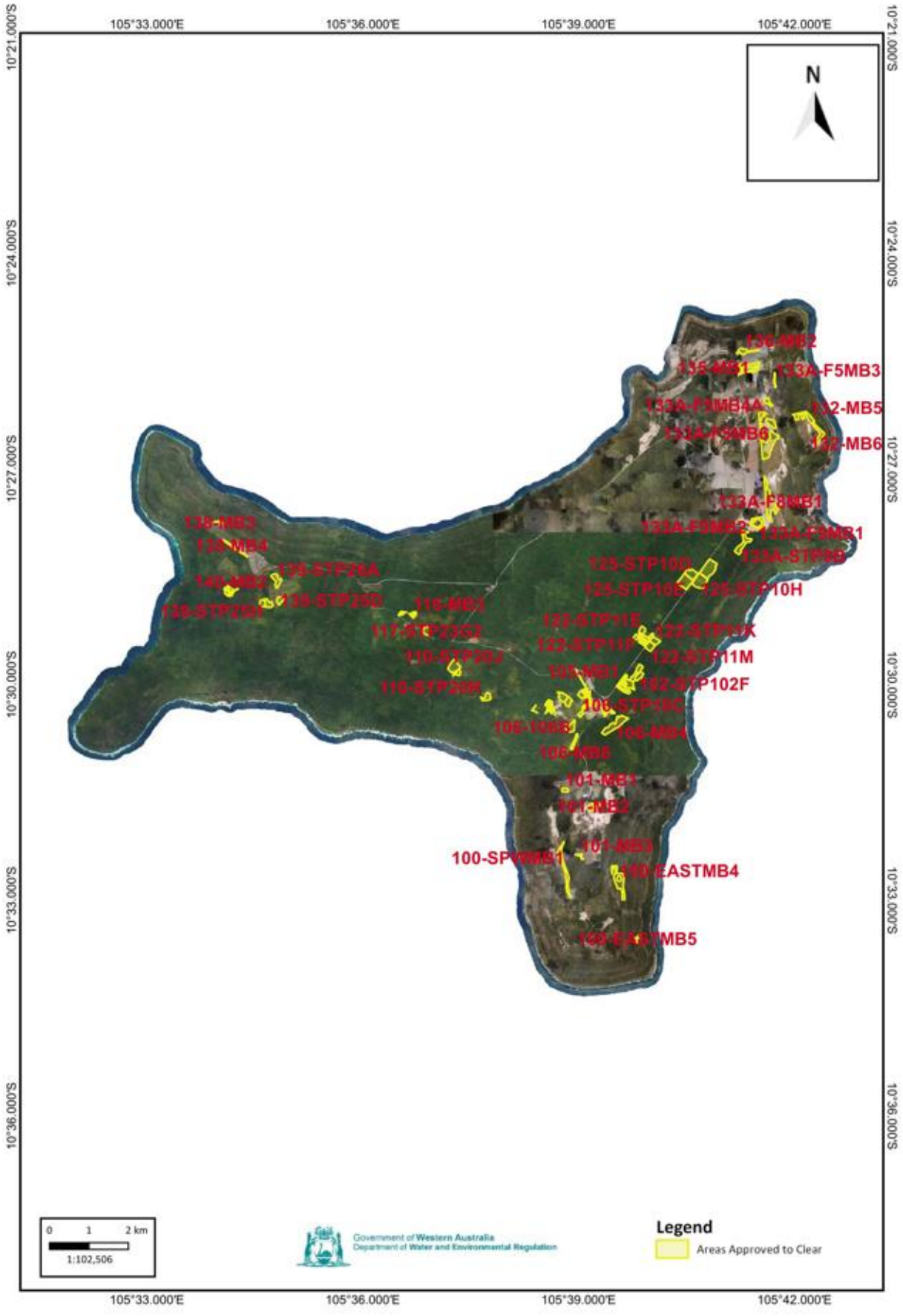

Figure 1. Map showing all areas applied to clear under this amendment application.

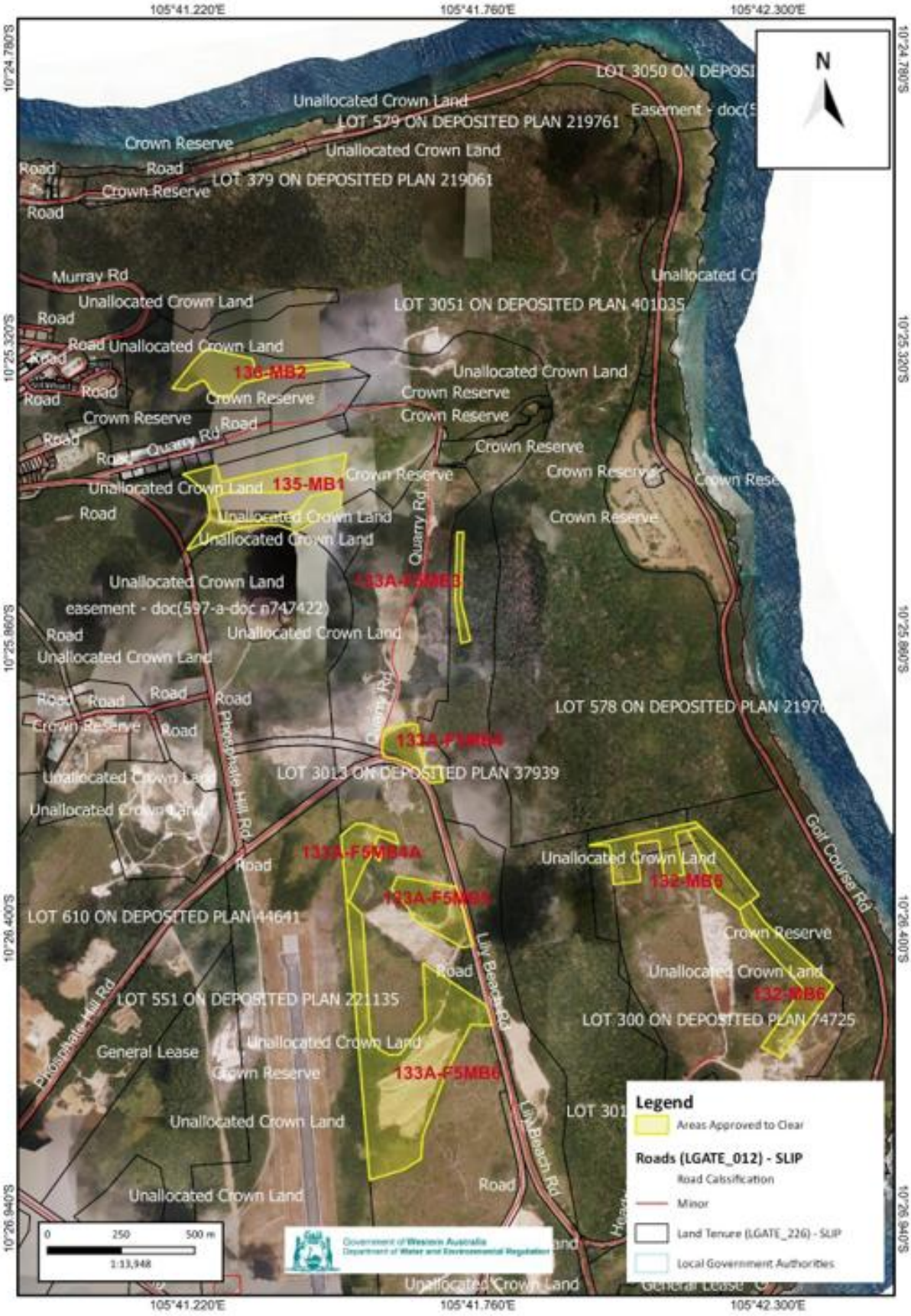

Figure 2. Map of the northern phosphate mining areas applied to clear.

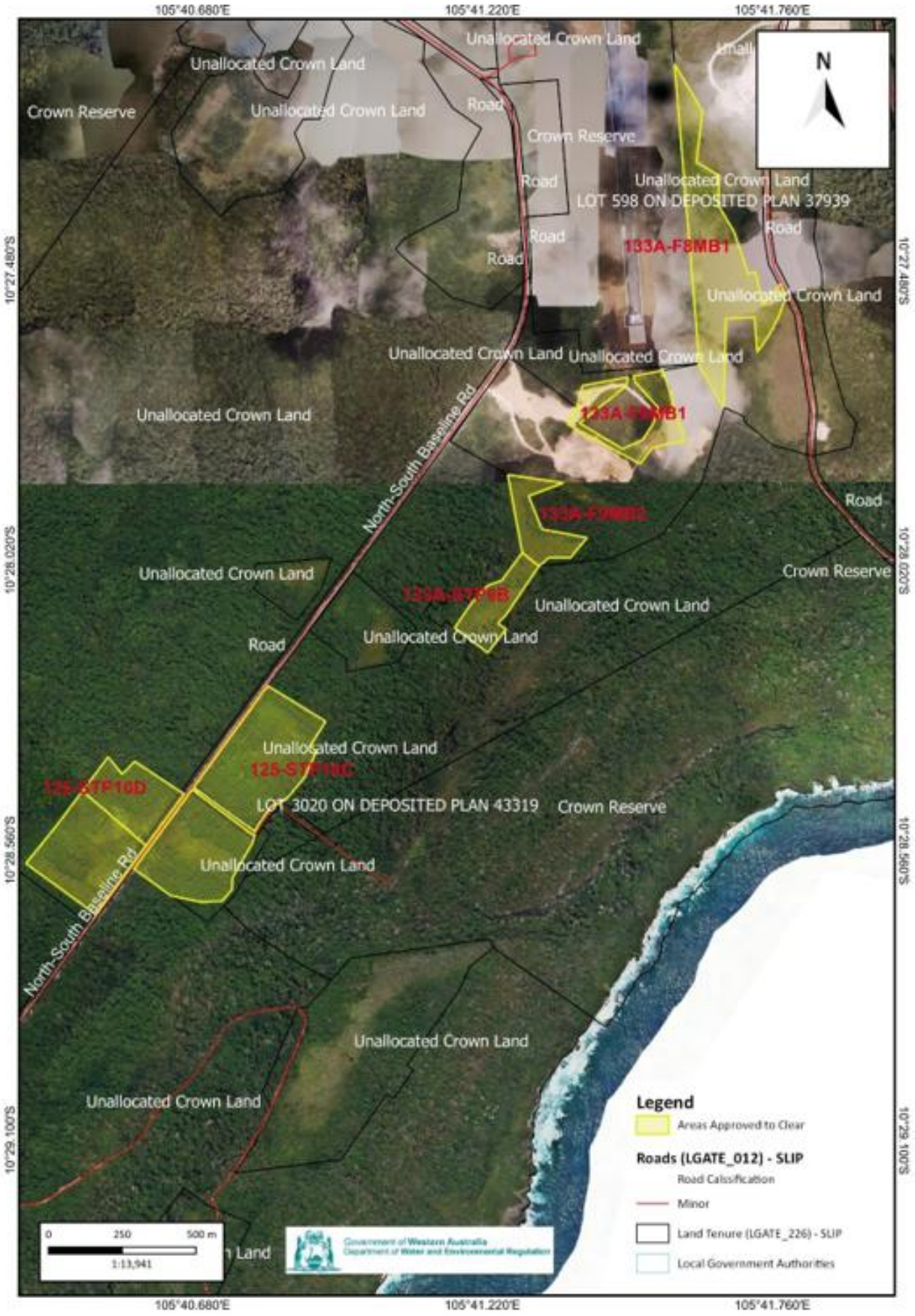

Figure 3. Map of the north eastern phosphate mining areas applied to clear.

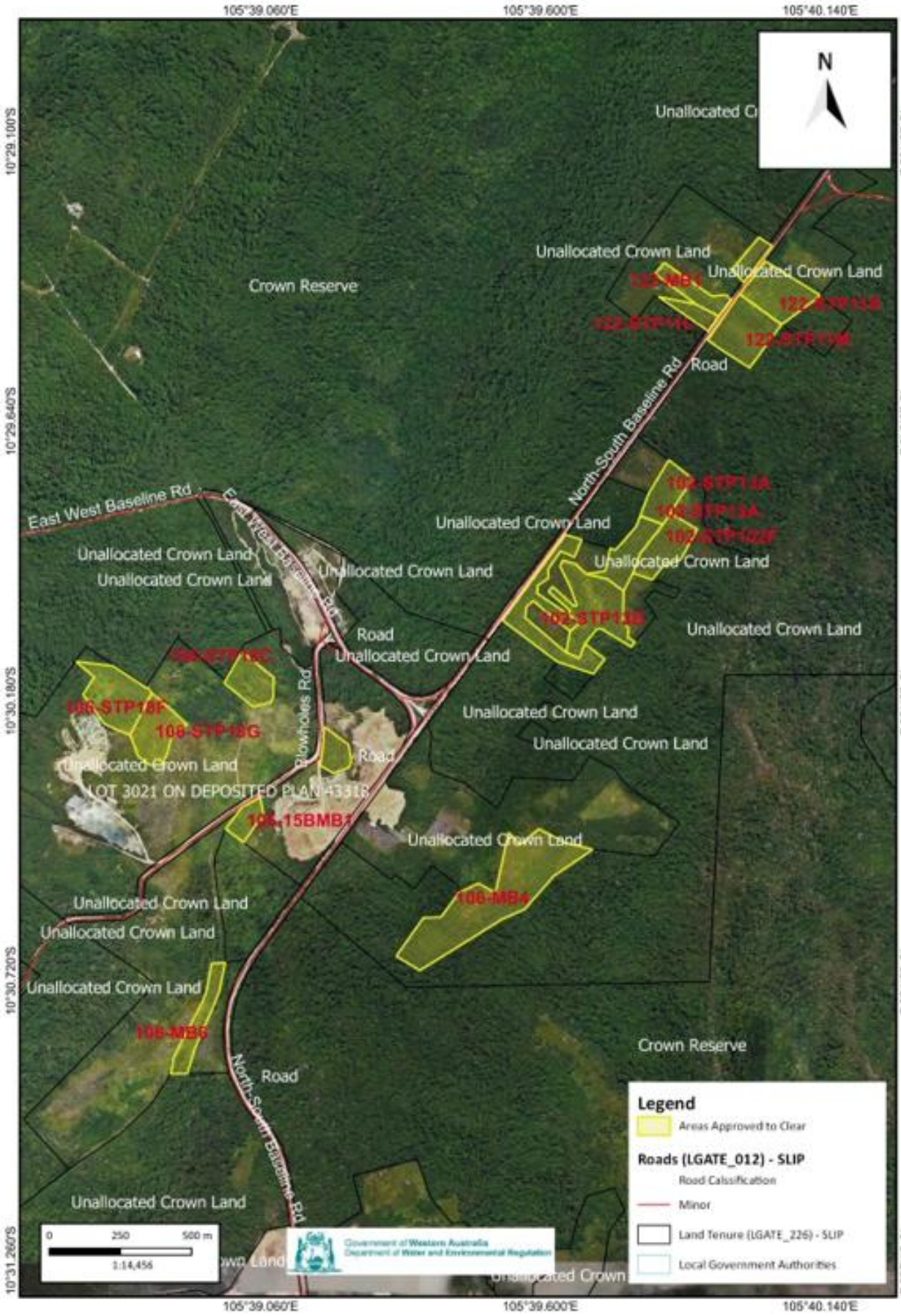

Figure 4. Map of the central-eastern phosphate mining areas applied to clear.

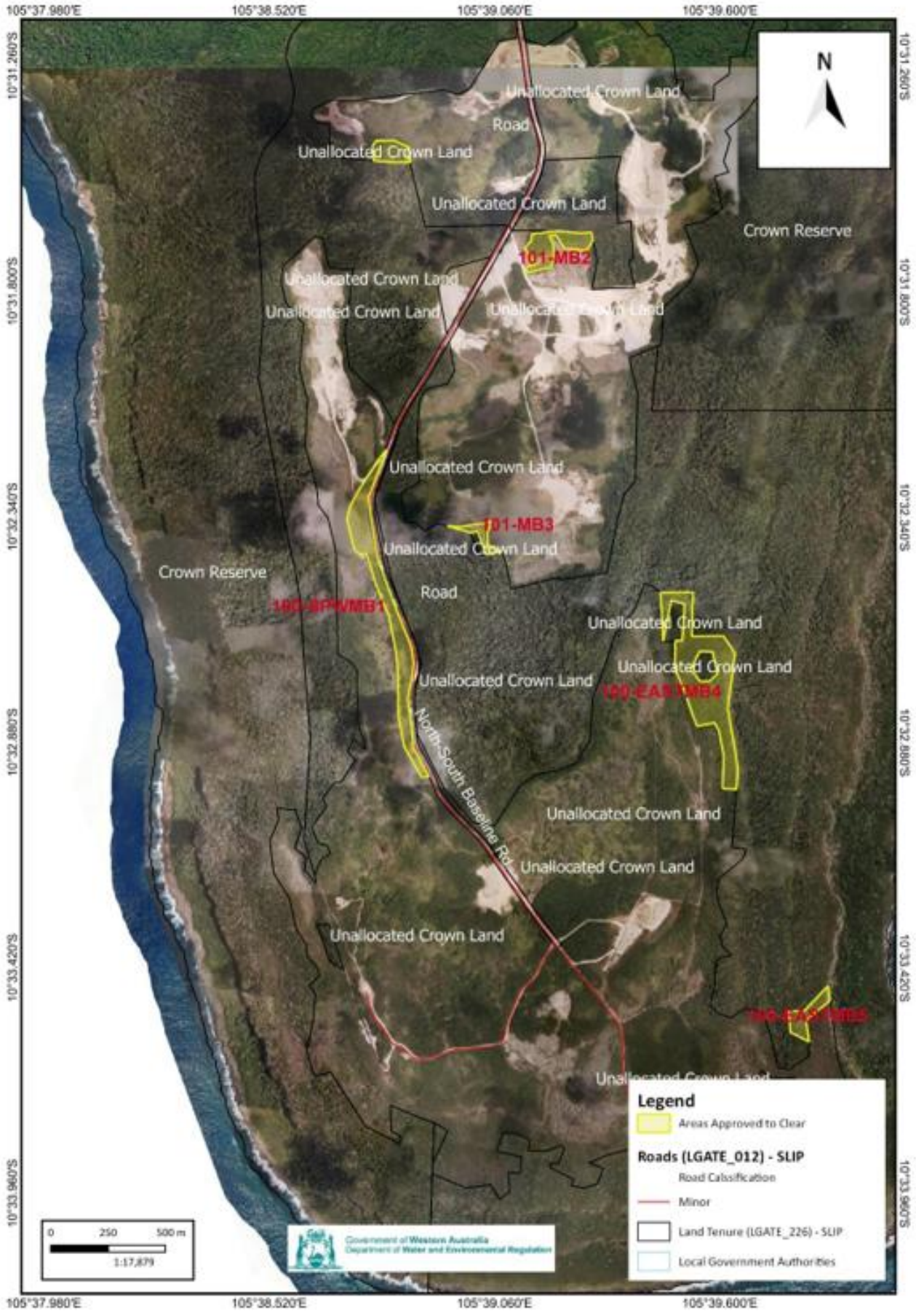

Figure 5. Map of the southern phosphate mining areas applied to clear.

Figure 6. Map of the central phosphate mining areas applied to clear.

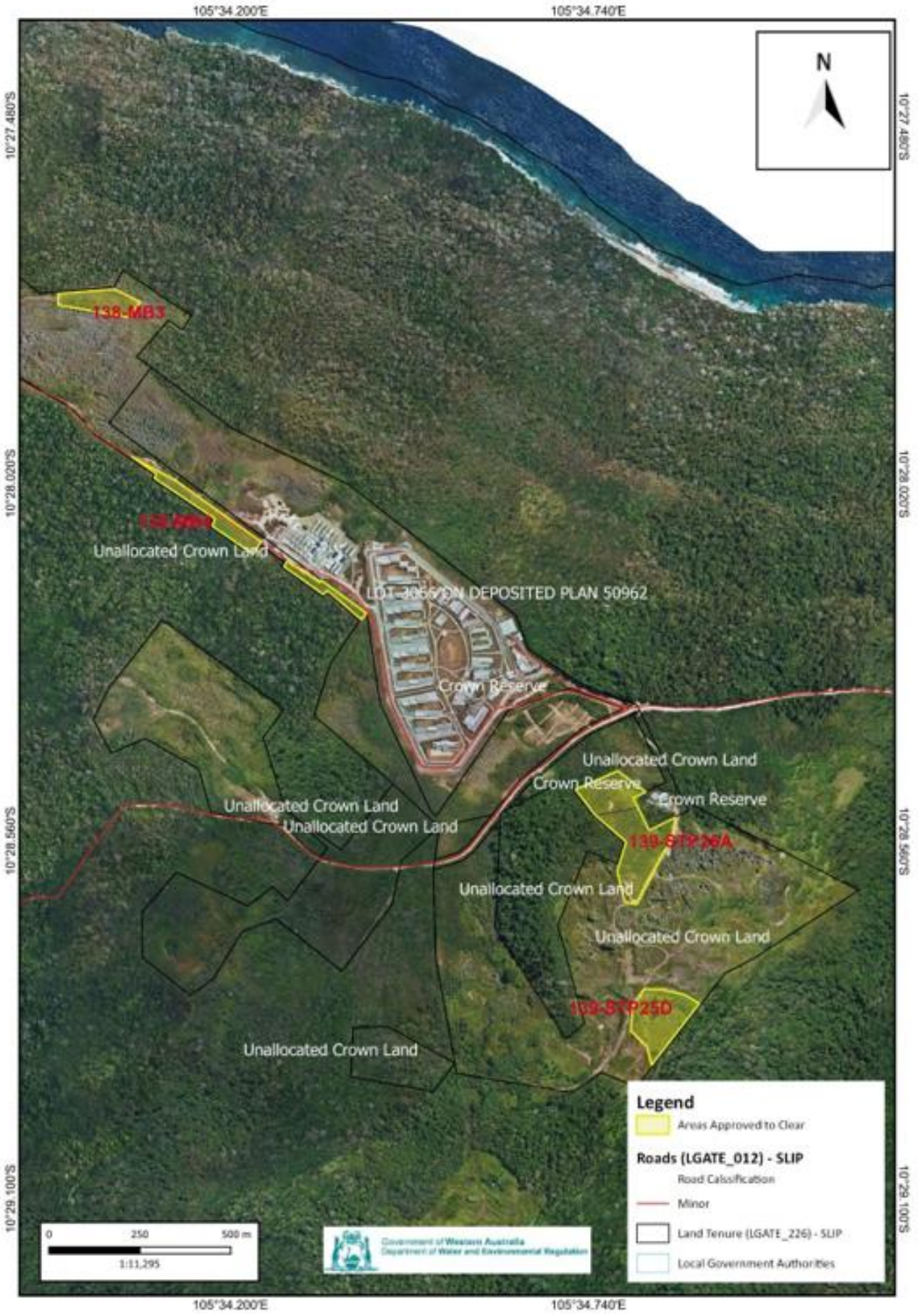

Figure 7. Map of the western phosphate mining areas applied to clear.

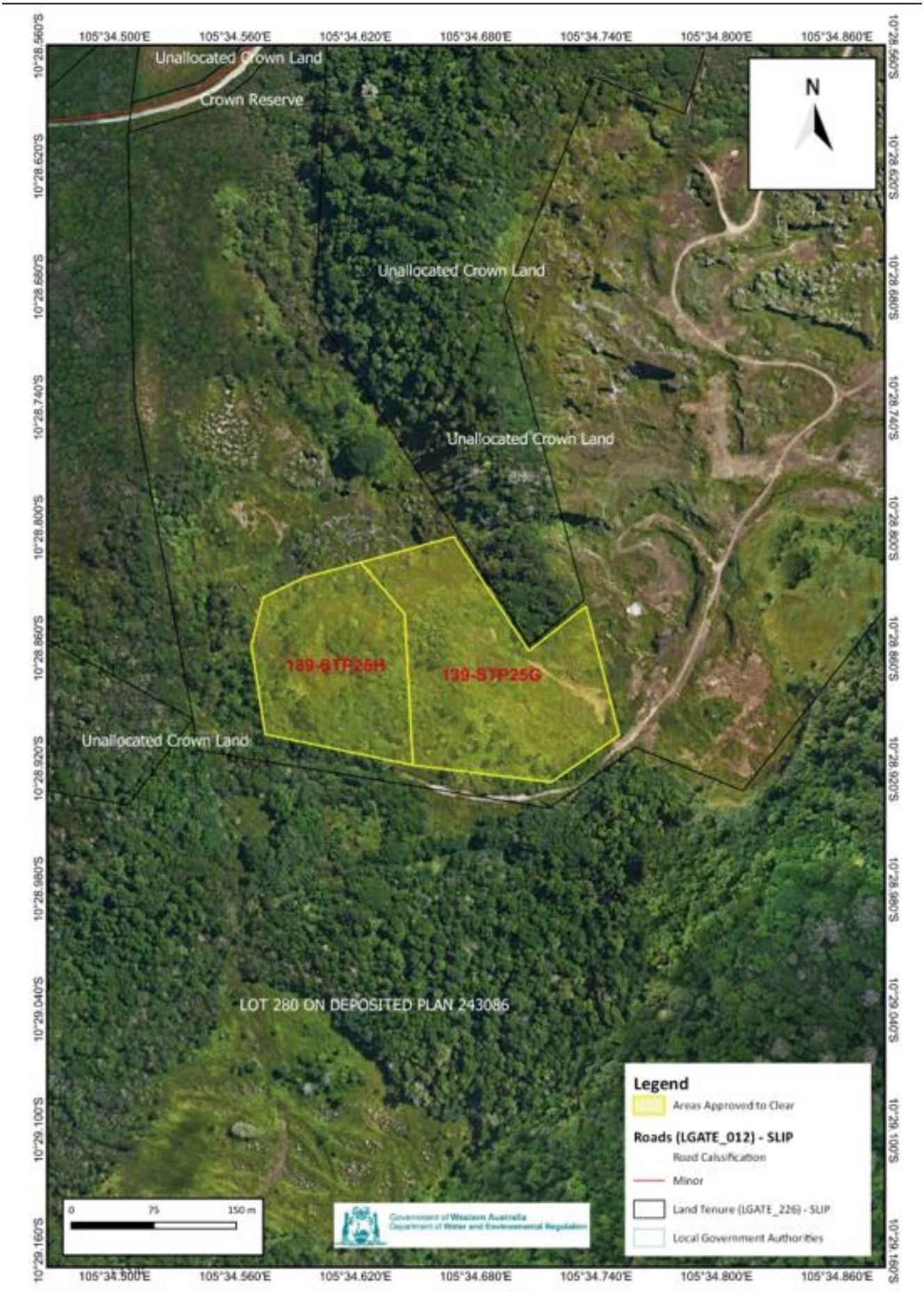

Figure 8. Map of the western stockpile access areas applied to clear.

Figure 9. Map of the central stockpile access areas applied to clear

Figure 10. Map of the central eastern stockpile access areas applied.

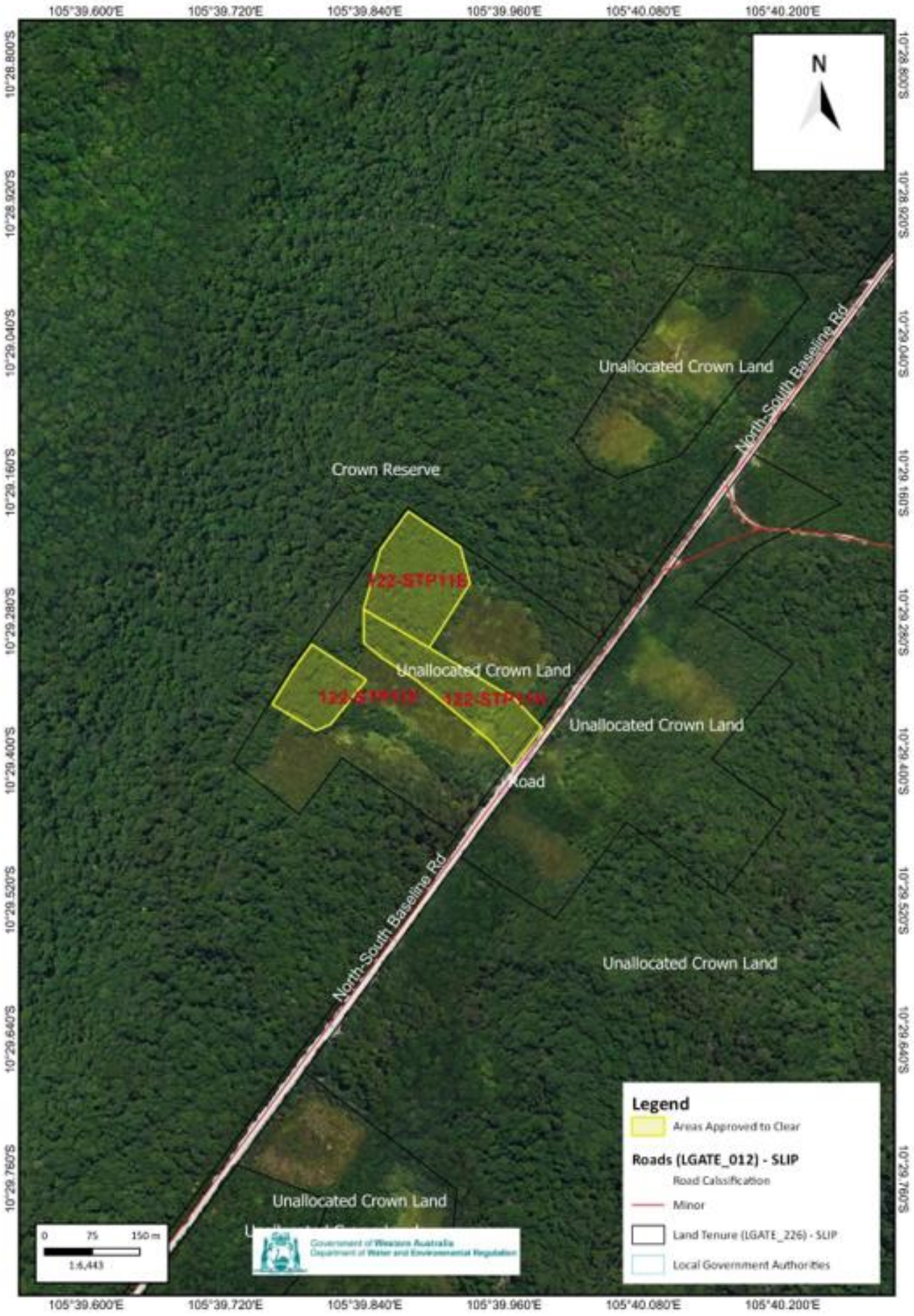

Figure 11. Map of the north eastern stockpile access areas applied to clear.

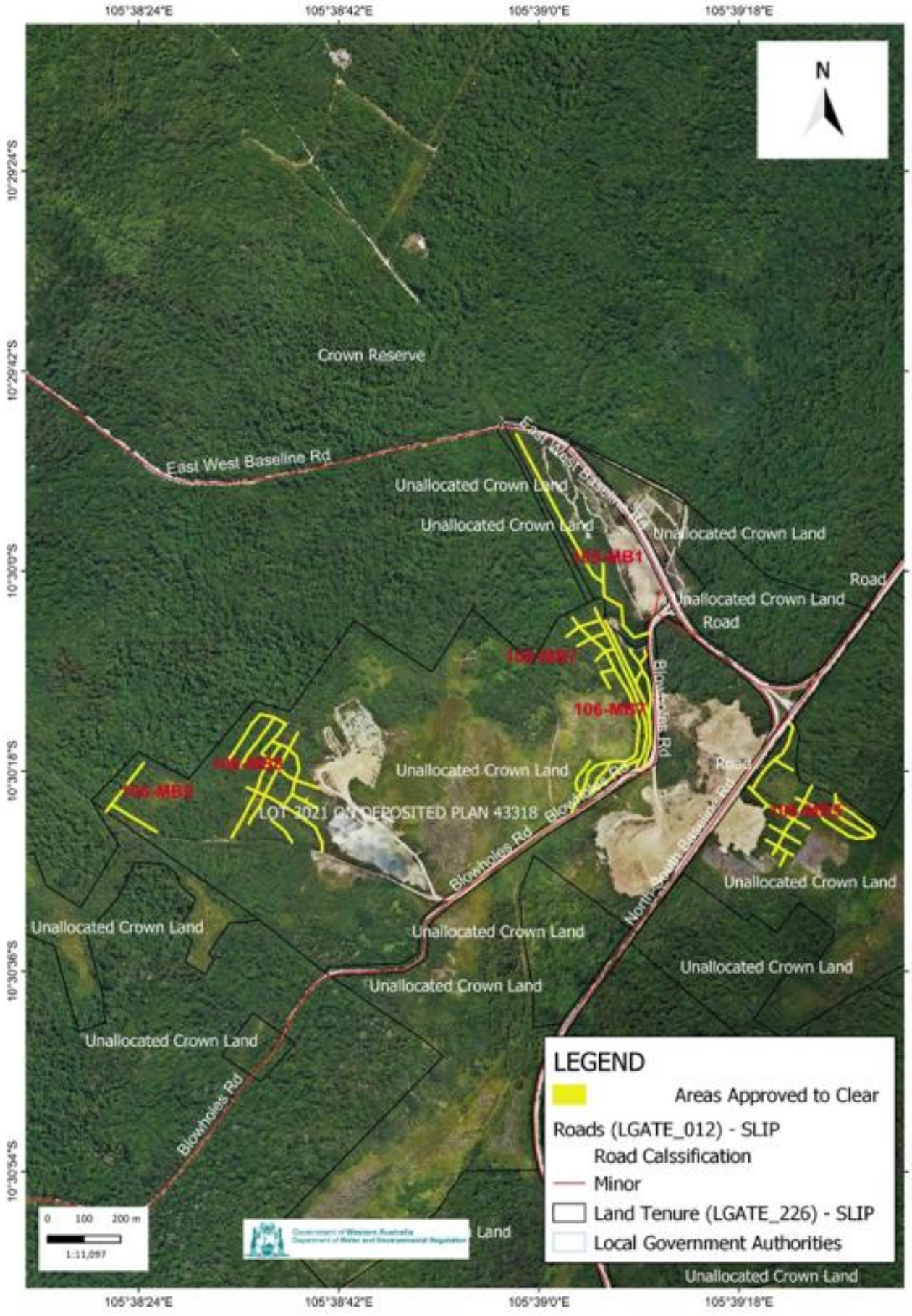

Figure 12. Map of the eastern exploration areas applied to clear.

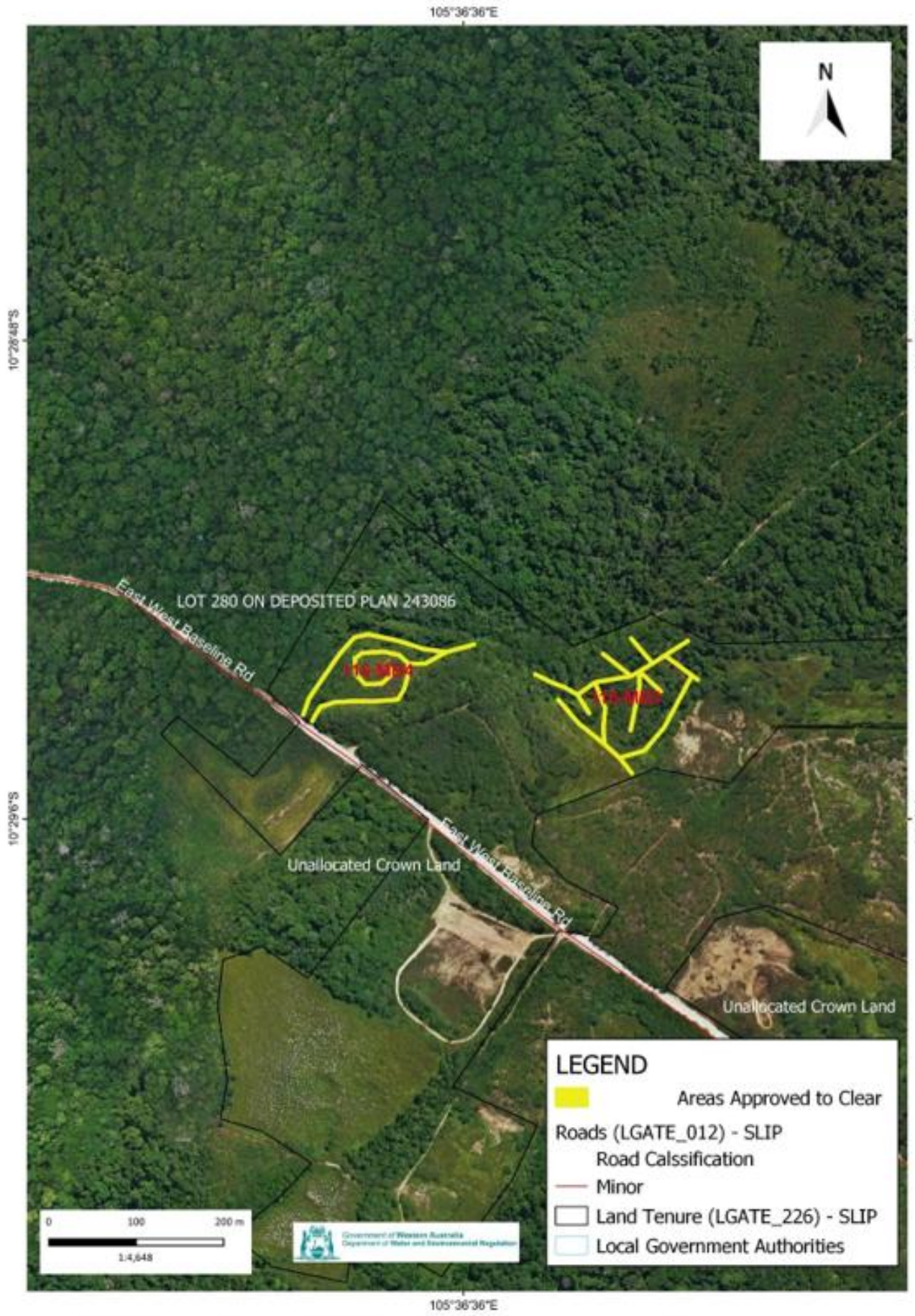

Figure 13. Map of the central exploration areas applied to clear.

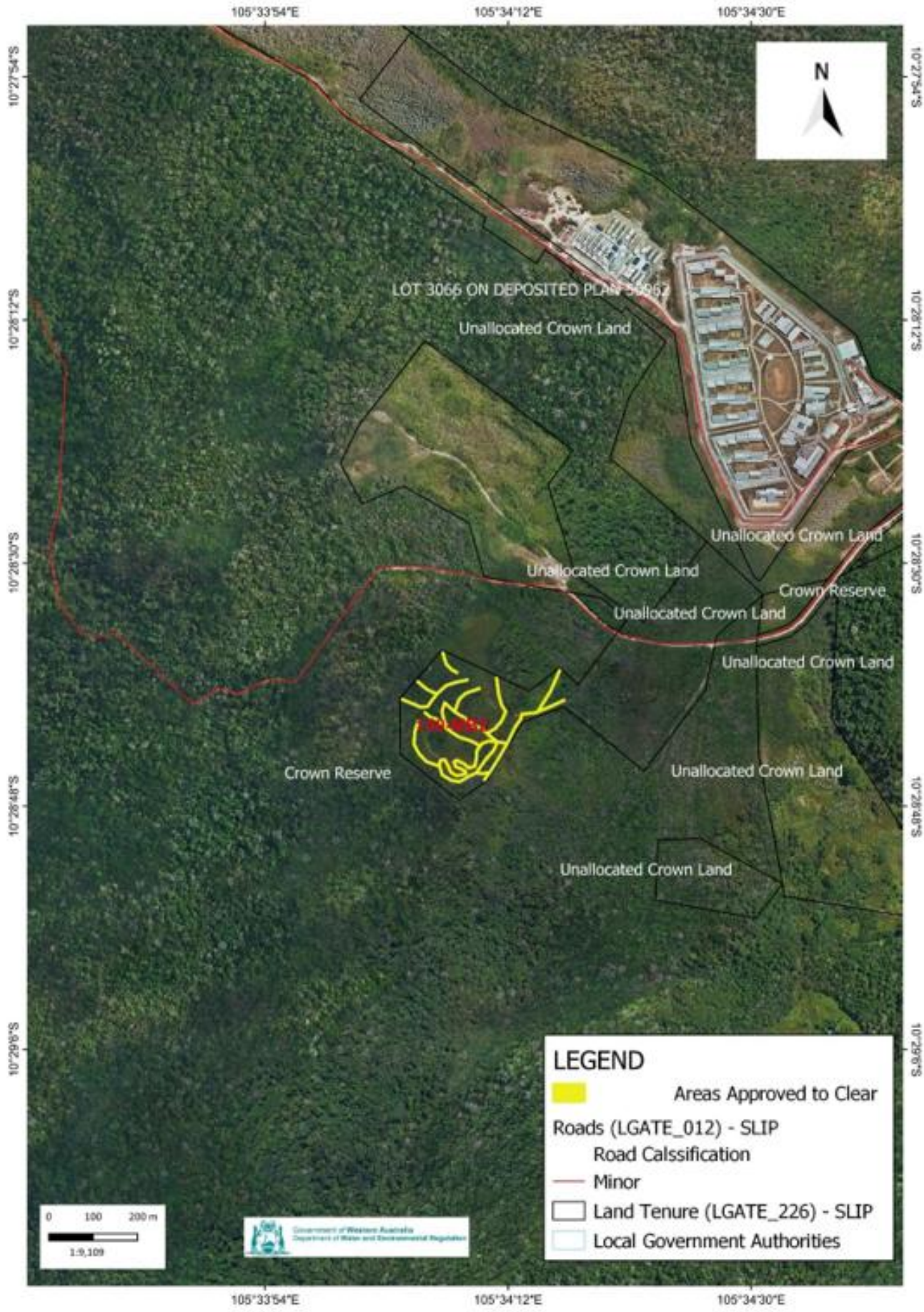

Figure 14. Map of the western exploration areas applied to clear.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include the:

- *Mining Act 1978*
- *Environment Protection (Impact of Proposals) Act 1974*
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, 2013)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020).

3 Detailed assessment of application

3.1. Avoidance, minimisation and mitigation measures

The applicant has advised that the following avoidance and minimisation measures will be undertaken (CIP, 2024):

- avoidance of all high value primary rainforest
- demarcate the application areas prior to clearing to ensure no clearing beyond the boundaries of these areas is undertaken.

The Delegated Officer has also considered that the rehabilitation of specific mining areas post mining is undertaken as part of the Christmas Island Minesite to Forest Rehabilitation (CIMFR) program. The CIMFR program is funded by a conservation levy paid by the applicant to the Territory Administration as a requirement of its mining lease. The CIMFR program is managed by Parks Australia under a Memorandum of Understanding between the Director of National Parks and the Territory administration.

The conservation levy is paid by the applicant on all lease areas. The applicant must pay the conservation levy quarterly to the Commonwealth. These funds are used to rehabilitate high priority mined areas, and undertaking other high priority conservation activities on Christmas Island, as largely determined by Parks Australia. Under the mining lease, the applicant is also required to maintain a relinquishment schedule, which sets out the sites to be relinquished to the Commonwealth. Parks Australia then prioritise the most strategic relinquished areas for rehabilitation.

The Delegated Officer was satisfied that the applicant has made an adequate effort to avoid, minimise and mitigate potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A) has revealed that the assessment against the clearing principles has, to an extent, changed from the previous CPS 4506 clearing permit decisions. Specifically, the assessment against clearing principle (b) (fauna values), clearing principle (c) (threatened flora), and clearing principle (h) (conservation areas) has changed. A detailed assessment against these clearing principles is provided below.

Furthermore, an updated summary against the clearing principles is provided in Appendix B noting the time since the previous assessment was undertaken.

3.2.1. Biological values (Fauna) - Clearing Principles (a) and (b)

Assessment

The application areas have been subject to a reconnaissance survey (the survey) in 2024 by Christmas Island Environmental Services, which included ground truthing to identify vegetation condition, type and the presence of native fauna, including the presence of Abbott's booby nests and other native fauna within and nearby the application areas (CIP, 2024).

The survey identified that the application areas largely comprise the following vegetation types (CIP, 2024):

- areas dominated by *Nephrolepis biserrata* fernland
- areas dominated by weed species *Leucaena leucocephala*
- previously cleared areas with vegetation regeneration comprising a mix of native and weed species with tree height less than 5 metres. Native species commonly include *Macaranga tanarius* shrubland / woodland
- areas with secondary well-developed regrowth more than 5 metres high which may form open / closed forest.

The condition of the application area varies from excellent to completely degraded (CIP, 2024), with most areas in a very good to completely degraded condition. The highest value fauna habitat within the application areas comprises areas with secondary well-developed regrowth in good or better condition (CIP, 2024). The vegetation condition for each of the application areas is available here CPS 4506-4 - Supporting information.PDF.

The survey included a likelihood of occurrence fauna assessment and identified that 10 conservation significant fauna species were either previously recorded in, or have the potential to occur in the application area (see Appendix A.2) (CIP, 2024). DWER's desktop assessment concurred with these findings.

Based on the survey findings, the species at greatest risk of impact from the proposed clearing are the:

- Abbott's booby (*Papasula abbotti*) (Endangered; EPBC Act)
- giant gecko (*Cyrtodactylus sadleiri*) (Endangered; EPBC Act)
- red-footed booby (*Sula sula*) (identified as a 'conservation value' in the Commonwealth North-west Marine Bioregional Plan)
- red crab (*Gecarcoidea natalis*) (keystone species – not conservation listed)
- coconut crab (*Birgus latro*) (not conservation listed) and are at risk of impact from the proposed clearing.

Regarding the applicants request to remove a Christmas Island pipistrelle (*Pipistrellus murrayi*) management condition from the previous clearing permit, DWER has considered that this species was declared extinct in 2021. Therefore, potential impacts to this species have not been discussed further below, and it is considered appropriate to remove the previous management condition that relates to this species. The cause of the extinction of this species is not completely known, however predation by introduced species and disease have been suggested as the most likely contributing factors.

Abbott's booby

Background – ecology, critical habitat, key threats

Abbott's booby only known extant nesting colony is on Christmas Island. This species nesting habitat is widely distributed in tall, forested areas of the plateau and in upper terrace forests (Commonwealth of Australia, 2020). Abbott's booby prefers nest sites on the lee side of slopes and gullies, with a clear area below and immediately downwind to facilitate take-off and landing (DEH, 2004). The majority of known nesting habitat (83%) occurs within the Christmas Island National Park (Commonwealth of Australia, 2020).

Abbott's Booby must fly into the wind to land and mostly nests on the north-west side of trees in parts of the island offering shelter from the prevailing southeast trade winds (Commonwealth of Australia, 2020). A variety of tree species are used for nesting, most often open-crowned *Syzygium nervosum* and *Planchonella nitida*, and *Tristiropsis acutangula* and *Celtis timorensis* where they become emergent (Commonwealth of Australia, 2020). Emergent trees are those trees that are taller than the main canopy and can reach heights of 50 metres on Christmas Island.

Abbott's booby forages on fish species over the ocean surrounding Christmas Island, although its foraging range is poorly known (Commonwealth of Australia, 2020).

Critical habitat for Abbott's booby includes all known nesting trees, and all forest vegetation with a 200-metre radius of known nesting trees (Commonwealth of Australia, 2020). The inclusion of forest vegetation within 200 metres of a known nesting tree as critical habitat is to protect nests from indirect impacts and other nearby emergent trees that may become nest trees in the future (Commonwealth of Australia, 2020). Known nesting trees are trees that are currently used for nesting, or have previously been used for nesting, where they are still standing (Commonwealth of Australia, 2020).

Forest vegetation within 100 metres of critical habitat is also important, noting that clearing vegetation within 300 metres of a nest may cause breeding pairs to abandon nests due to increased wind turbulence from southeast trade winds (Commonwealth of Australia, 2020). Forest vegetation is not defined in the Abbott's Booby Conservation Advice (the advice).

Forest vegetation with suitable emergent nesting trees with no evidence of nesting are also important to the recovery of this species (Commonwealth of Australia, 2020). These areas are potential critical habitat (Commonwealth of Australia, 2020). The advice states that clearing of critical habitat and potential critical habitat should be avoided and mitigated to the greatest extent possible (Commonwealth of Australia, 2020).

Key threats to the Abbott's booby include the modification and destruction of nesting habitat from new vegetation clearing and edge effects to critical habitat from clearing (DEH, 2004).

Nesting habitat – direct impacts

Based on previous island wide surveys undertaken for Abbotts booby in 2002, 2009, 2011, 2013 and 2015 (data records added to over time), there are historical Abbotts booby nesting records within the following application areas:

- 106-STP-18F - one 2013 record
- 106-MB4 - two 2015 records
- 110-STP20KA - one 2011 record
- 125-STP10C – two 2011 records and one 2015 record
- 125-STP10D - one 2011 record
- 125-STP10E – one 2015 record
- 125-STP10H – one 2013 record

No nesting trees were identified within or adjacent to the application areas during the ground truthing reconnaissance survey (CIP, 2024).

Based on the survey, forest habitat comprising tall secondary regrowth of up to 30 metres occurs within portions of the 106-STP18F, 101MB1, 102-STP13B, 125-STP10D, 133A-STP9B and 122F11STP-11E application areas. This includes *Syzygium nervosum, Planchonella nitida* and *Tristiropsis acutangula* trees (CIP, 2024). There is the potential for these portions to contain emergent trees that provide suitable nesting habitat for Abbotts booby and may therefore be used in the future. Pre-clearance surveys to identify and avoid nesting Abbotts boobies with appropriate buffers would assist to manage the risk of impacting any nesting birds during clearing.

There are numerous Abbotts booby historical nesting records within 200 metres of several application areas, including those application areas shown in Figures 3,4 and 6-14. While these records are historical, without additional information to confirm otherwise, it is presumed that these records are still being used for nesting, given the species exhibits nest site fidelity (Commonwealth of Australia, 2020).

The forest habitat in the application areas that occurs within 200 metres of these nesting records aligns with the description of Abbott's booby critical habitat. These areas comprise 103 hectares, excluding very recently cleared areas under the previous amendment. Of this 103 hectares, 21 hectares is in a degraded to completely degraded condition, comprising low density and low height regrowth. A further 69.6 hectares is modified, largely low to medium density regrowth. The applicants Survey notes that an estimated 99% of the vegetation within the application areas is less than 20 metres high and 92% is less than 15 metres high, based on ground truthing (CIP, 2024).

Based on the expected extent of impact to critical habitat for Abbott's booby under this proposed amendment, the Delegated Officer determined that the impact is not a significant residual impact. This is noting the modified condition of the application areas, site context, the lack of current nesting use observed within or adjacent to the

application areas (CIP, 2024), and extent of high value nesting habitat protected within Christmas Island National Park (8,505 hectares), where most known nesting habitat occurs.

The Delegated Officer considered the cumulative impact of clearing regrowth rainforest for phosphate mining on this species resulting from several approved and applied for Christmas Island Phosphate clearing permit applications (mostly amendments). While the cumulative impacts are not at a level that would warrant a decision to allow no further clearing within the current mining lease areas, the Delegated Officer considers that the loss of potential Abbott's booby nesting habitat must be appropriately managed through conditions on the clearing permit to ensure an acceptable environmental outcome. These conditions are detailed below within Section 3.2.1 under 'Conditions'.

In making this determination, the Delegated Officer had regard for the revegetation actions undertaken by Parks Australia within high priority relinquished mining areas, using funds paid into a conservation levy by the applicant. These actions would have the effect of reinstating native vegetation nearby Abbott's booby nest sites, to mitigate the long-term impacts to this species habitat. More information on revegetation actions is discussed under 'Nesting habitat – indirect impacts' below.

Nesting habitat - indirect impacts

Regarding the potential impact of wind turbulence on nest sites, strong southeasterly trade winds prevail between April and November on Christmas Island. Wind tunnel experiments (Brett, 1989) indicate that clearing forest increases turbulence in the surrounding canopy, which may lower fidelity, and increase adult mortality of Abbott's booby (Commonwealth of Australia, 2020).

Studies indicate that the removal of vegetation within 300 metres downwind of a nest tree may cause breeding pairs to abandon nests due to wind turbulence (Commonwealth of Australia, 2020). The Abbott's Booby Conservation Advice notes that the indirect impact of clearing within 300 metres of a nest site depends on the aspect of the site, nature of vegetation to be cleared and number of nest trees to be protected (Commonwealth of Australia, 2020).

Noting the greatest risk of impact to nest sites from wind turbulence is from clearing upwind of southeasterly trade winds, the application areas within 300 metres and upwind of a previously recorded nest site have been considered further and are shown in Table 1 below.

Table 1. Application areas within 300 metres upwind of a recorded Abbott's booby nest. Estimated maximum vegetation height and density is derived from the survey (CIP, 2024).

Application Area Reference	Maximum height of vegetation in any portion (m)	Density of vegetation	Closest downwind nest (m)	Size of area (ha)
106-MB4	8	Low	85	10.58
106-MB6	15	Low quality fern fields	140	2.06
138-MB3	10	Low	105	1.14
106-STP18C	25	Low	175	2.05
106-STP18F	35	Low to medium	100	3.80
106-STP18G	10	Low quality fern fields	135	2.77
110-STP20J	28	Low to medium	55	6.03
122-STP11F	28	Medium to high	150	1.09
125-STP10C	32	Low	155	11.51
125-STP10D	30	Low to high	175	5.34
133A-STP9B	35	Low to high	165	3.66
139-STP26A	8	Low to medium	95	4.09
139-STP25G	5	Low	280	3.02

Based on the vegetation height (15 metres or less) and density of the 106-MB4, 106-MB6, 138-MB3, 106-STP18G, 139-STP26A, 139-STP25G application areas, the proposed clearing of these areas is not likely to substantially increase wind turbulence. This is noting that the closest downwind historical nest sites to these areas are buffered by much higher growth primary rainforest. Therefore, the proposed clearing of these areas is not likely to impact on nesting birds from increased wind turbulence.

The 106-STP18C, 122-STP11F, 125-STP10C, 125-STP10D and 133A-STP9B application areas include portions of taller regrowth that may have a greater effect on wind turbulence to downwind nests. All these areas provide a minimum 150 metre buffer to the nearest recorded nest sites. These buffer areas comprise continuous, dense primary rainforest, typically 40 metres or so high. Noting this, the topography of these sites, and the extent and location of those taller patches of regrowth within these larger application areas (1% of the vegetation in the application areas recorded as more than 20 metres tall), the proposed clearing of these areas is not likely to impact on nesting Abbotts booby from increased wind turbulence.

The majority of the 106-STP18F application area maintains a 190-metre buffer to the nearest recorded nest. Much of the western portion of this area closest to the recorded nest contains low height fern fields (CIP, 2024). However, this application area includes a 0.23-hectare triangular area at its north-western extent, which is 100 metres from the recorded nest and contains some taller regrowth, albeit lower in height than the adjacent primary rainforest. Given the small size and tapered shape of this area at its closest point to the recorded nest, and 100 metre taller primary rainforest buffer that separates this area from the nest, wind turbulence impacts are unlikely to be significant from the clearing of this area.

The 110-STP20J application area includes low to medium density regrowth with maximum heights ranging from between 18 and 28 metres, in a good to degraded condition. This area is 55 metres upwind of the nearest Abbott's booby nest site, with a further three nests within 150 metres of this site. While the eastern portion of the site farthest from the recorded nest sites sits lower in the landscape, the northeast portion of the site appears to contain taller regrowth vegetation, on a similar contour. Therefore, the clearing of this vegetation may impact on at least the closest recorded nest, noting it is only 50 metres away. Management measures to maintain a suitable buffer to downwind nest sites from this application area are required to address this impact.

In addition to wind turbulence, there is the risk that clearing native vegetation nearby nest sites may (Commonwealth of Australia, 2020):

- cause edge effects to adjacent primary rainforest containing nest sites; and
- cause high levels of noise which may lead to birds abandoning nests, leaving chicks or eggs exposed to predation.

The advice specifies that edge effects caused by clearing are a key reason for the decline of this species (Commonwealth of Australia, 2020). The advice notes that clearing of forest vegetation adjacent to nesting habitat reduces the habitat suitability of adjacent areas due to higher light levels changing its floristic structure, changes in localised humidity levels, weed incursion and pest species establishment (Commonwealth of Australia, 2020).

Given the above, there is a risk that the proposed clearing will result in edge effects to Abbott's booby nest habitat. This is considering the proximity of historical nest sites and the potential for new nest sites to have been occupied nearby the application areas, which are not yet known. Therefore, management measures are required to protect Abbotts booby nest habitat nearby the application areas from edge effects and noise impacts.

Avoidance, mitigation and management

The applicant has committed to identifying Abbott's booby nest sites within and nearby the application areas prior to clearing, and maintain a 50-metre avoidance buffer to all Abbott's booby nest sites. This commitment is adequate to minimise the risk of noise impacts to Abbott's booby nesting activity, and nesting habitat, respectively.

The applicant pays a conservation levy as required by its mining lease, to fund the rehabilitation of specific relinquished areas post mining by Parks Australia. Revegetation nearby Abbott's booby nest sites is a high priority by Parks Australia. The successful rehabilitation of mined areas post mining near Abbotts booby nest sites, would assist to reinstate Abbotts booby nest habitat, and minimise long-term edge effects (as noted above) to nesting habitat through re-instating primary rainforest structure, natural light and humidity levels and preventing significant weed incursion.

Parks Australia provided comment on the proposed clearing and advised that the most important factors for successful rehabilitation of mined areas on Christmas Island include:

- the maintenance of at least one meter of topsoil above the pinnacle post mining; and
- the availability of recently cleared vegetative material for re-spread.

Parks Australia advised that one metre of topsoil above the pinnacle is not typically present on relinquished areas, which has led to difficulties in successfully and efficiently rehabilitating priority areas, including areas nearby Abbotts booby nest sites. Parks Australia note that while the applicant is required to make a certain volume of

topsoil available through the mining lease, topsoil availability nearby high priority rehabilitation areas is often limited, which impacts on successful and timely rehabilitation.

Based on Parks Australia's advice, the Delegated Officer considers it appropriate to require the applicant to maintain one metre of soil profile above the pinnacle, and make cleared vegetative material available post mining, for any areas cleared within 100 metres of Abbotts booby nest sites. This requirement will help to facilitate timely rehabilitation by Parks Australia nearby Abbotts booby nest sites, once sites are relinquished to the Commonwealth (see Section 3.1). This is an important measure to manage the long-term risk of edge effects to Abbott's booby nesting habitat from clearing, reinstate potential future Abbotts booby nesting habitat, and minimise the risk of future decline of this species population on Christmas Island.

The Delegated Officer considers that the above requirements are site preparation actions to facilitate future rehabilitation, as a specific management action for a threatened species, rather than rehabilitation actions in and of themselves.

Subject to appropriate management conditions as discussed above, the proposed clearing is not likely to impact on nesting individuals or substantially reduce the extent of critical habitat or potential critical habitat for this species in the long term.

Red crab

Red crabs are a keystone species on Christmas Island. Red crabs are common in the moist environment of the rainforest, however, inhabit a variety of other habitats, including areas of primary and secondary regrowth (Director of National Parks 2015).

Red crabs were identified within several application areas at varying densities, and it is likely that they occur within all application areas, at least transiently (CIP, 2024).

At the beginning of the wet season (October to December) every year adult red crabs migrate from the forest to the coast to breed and spawn (Director of National Parks 2015). An island wide study of red crab migration routes, which included mark and recapture analysis, was previously undertaken in 2010 to identify the most strategic locations for red crab migration fencing and infrastructure points on Christmas Island.

The island wide study identified that the vegetation within and surrounding four of the application areas, 110-STP20J, 110-STP20KA, 110-STP20R and 110-STP20Q, forms part of a red crab migration route (Parks Australia, 2018). These application areas are largely surrounded by areas approved for clearing under CPS 8032/1 and pinnacle fields, which are inhospitable to crabs. LiDAR data indicates that the vegetated portions of the application areas not comprising pinnacle fields, and areas of adjacent native vegetation, likely provide a significant corridor for migrating red crabs (see Figures 15 and 16) (Parks Australia, 2018).

Red crabs need shade to move through the landscape and if exposed to the sun for more than 20 minutes, can overheat and die. The removal of the vegetation within the four abovementioned application areas, coupled with that approved to clear under CPS 8032/1, will limit successful crab migration movement through this general area, and may lead to a decline in the red crab population. Staged clearing and site preparation actions (site ripping, laying vegetative material, maintaining soil profile) to facilitate future successful rehabilitation, would assist to minimise long term impacts to red crab migration at this location.

There is also one red crab over-road bridge between application areas 122-STP11J and 122-STP11K, and one between the southern end of area 125-STP10E and primary rainforest on the opposite side of North-South Baseline Road. The 122-STP11J and 122-STP11K application areas are not mapped as having high red crab burrow densities and noting there are two over-road bridges between primary rainforest within 350 metres south, and six within 580 metres north, the proposed clearing of these areas is not likely to significantly impact on a red crab migration route.

The bridge adjacent to area 125-STP10E is at the southern extent of this application area, which borders primary rainforest immediately south, and the proposed clearing of 125-STP10E is not likely to limit successful crab movement through this area. This is also noting there are a further 7 over-road bridges within 1 kilometre south of 125-STP10E.

The remainder of the application areas are not known to form important red crab migration pathways. However, the clearing of these areas will likely impact on individual red crabs using the application areas at the time of clearing and may lead to increased mortality.

The applicant has committed to liaising with Parks Australia prior to clearing during the red crab migration period to identify appropriate measures to minimise crab mortality.

The applicant has also committed to undertake the following red crab management measures within its EMP, which must be complied with under the conditions of its mining lease (PRL, 2017):

- schedule haulage, mining and road maintenance to minimise vehicle traffic on high-risk roads during migration
- incorporate red crab migration into mine planning to determine management methods and strategies
- assess red crab densities in proposed clearing areas and where very high densities occur consider options to minimise mortality through amending boundaries of the clearing envelope and/or clearing high density areas after red crabs leave burrows for migration
- continue red crab management and awareness training of staff including promoting awareness and encouraging the sharing of vehicles to and from work and using red crab 'friendly' routes to minimise road mortality
- monitor vehicle usage and red crab mortality during migration periods to assess vehicle restriction effectiveness
- subject to capacity and resources, work with island partners to assist in the implementation of island-wide conservation and environmental management programs.

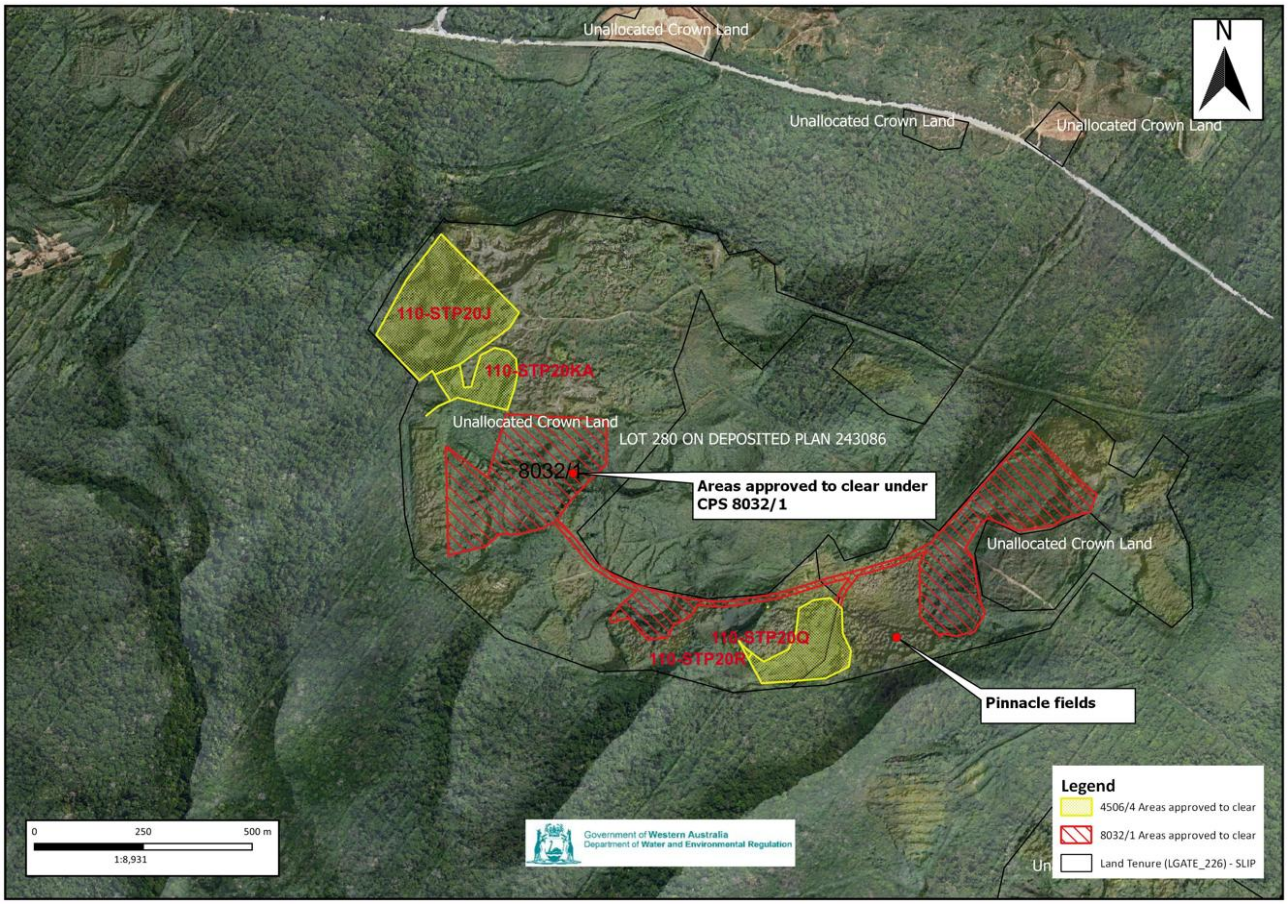

Figure 15. CPS 4506/5 application areas, CPS 8032/1 areas approved to clear and showing the pinnacle fields, indicating importance of the vegetation for red crab migration.

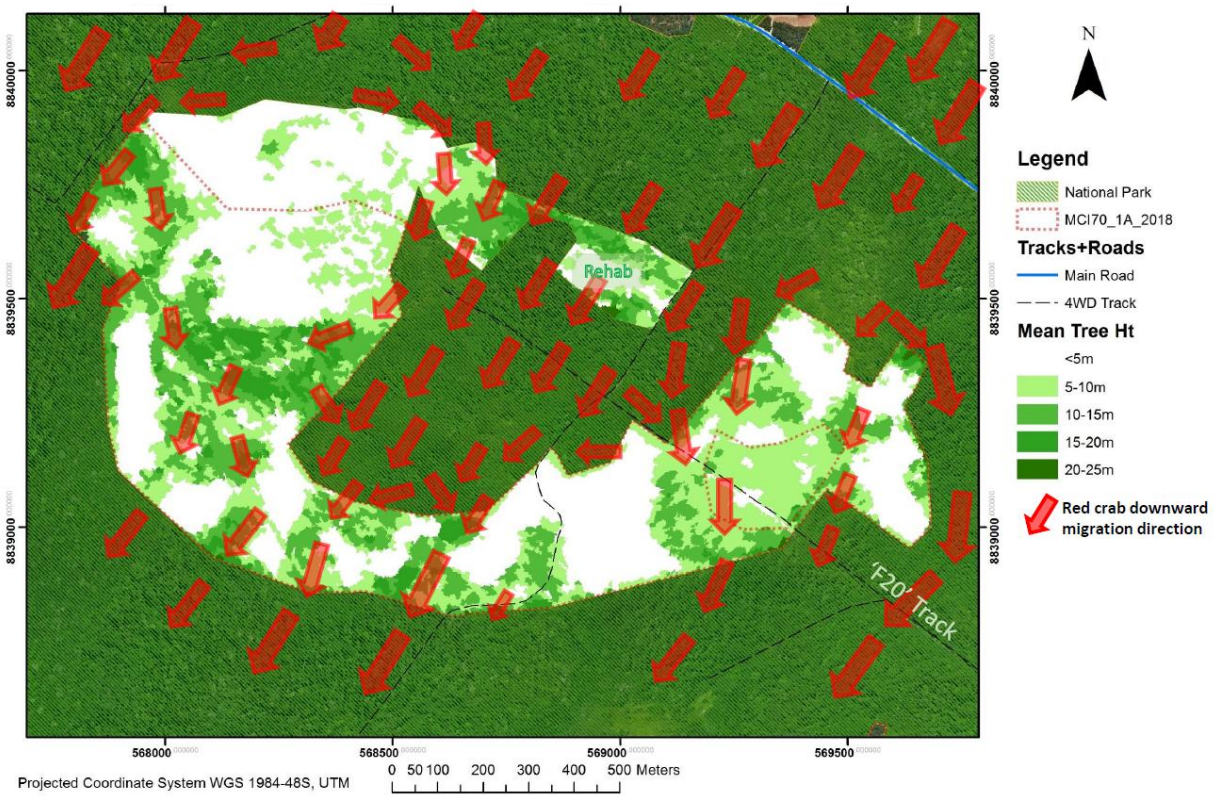

Figure 16. Red crab downward migration through the application area and surrounds, identified through mark / recapture experiments.

Robber crab

Robber Crabs are found on most parts of Christmas Island, from the shore terrace to the highest plateau areas. Robber Crabs are habitat generalists, and all areas of previously uncleared rainforest comprise high quality habitat for this species (Director of National Parks, 2014).

This species was recorded in the 100-EastMB5 and 101-MB2 application areas (CIP, 2024). While this species was recorded on site, given the extent of higher quality habitat that exists for this species within surrounding areas of primary rainforest in Christmas Island National Park, the habitat within the application areas is unlikely to be significant for this species.

There is however the risk of robber crab mortality from fauna strike during clearing operations, should they be using the application areas at the time of clearing. Measures to remove and relocate robber crabs from the application areas prior to and during clearing will assist to minimise this risk.

The applicants EMP, which is required to be complied with under the conditions of the mining lease, includes the following commitments which will assist in minimising fauna strike with robber crabs (PRL, 2017):

- remove and relocate Robber Crabs prior to clearing vegetation as required
- minimise vehicle-based mortality through employee education programs.

Giant gecko

The giant gecko is endemic to Christmas Island. This species is found in all Island habitats, except for areas lacking trees and shrubs. Evergreen tall, closed primary forest on the plateau is the most important habitat for this species and is where the highest density of occurrence has been recorded (Director of National Parks, 2015; Commonwealth of Australia, 2013). The survey did not identify this species within the application areas (CIP, 2024), however this species is nocturnal and was not likely visible during the time of survey.

Based on available datasets informed by island wide surveys undertaken by Parks Australia, this species has previously been recorded within the 133A-F8MB1 (2015 record) and 125-STP10C (two 2011 records) application areas. There is also a historical record (2015) around 5 metres from the 133A-F5MB3 application area.

The Giant Gecko Conservation Advice indicates that habitat loss has been a significant threat to this species in the past, however currently this is a potential future threat rather than a current threat given the protections in place to preserve the remaining primary forest areas within the Christmas Island National Park (Commonwealth of Australia, 2013).

The application areas largely comprise low to medium density regrowth in a very good to completely degraded condition. This modified habitat is unlikely to be significant for this species noting the extent of higher quality habitat, comprising a greater density of recorded individuals, within the closed primary forest of Christmas Island National Park (around 8,505 hectares).

Noting that this species is found in all habitat types on Christmas Island and has been previously recorded in the abovementioned 133A-F8MB1 (2011 record) and 125-STP10C application areas, the proposed clearing may impact on this species through fauna strike should it be using the application area during clearing.

The applicant has commissioned biological surveys for this species across several locations on Christmas Island to better inform its population numbers and status on Christmas Island. This survey work will help to identify the likely extent of occurrence of this species within the application areas, and whether targeted management is required to reduce the risk of fauna strike. The reports associated with these surveys are yet to be finalised.

To allow the findings of the surveys to be realised, the Delegated Officer has determined it is appropriate to condition the permit to allow a reduced clearing extent (30 hectares) over the first 18 months of this amendment. The Delegated Officer considers that the impact to individuals of this species from the initial clearing of 30 hectares is unlikely to be significant, based on the current knowledge of this species highest density habitat and known locations. After 18 months, the applicant will have the option of seeking approval from DWER's CEO to clear to the full extent proposed (219.69 hectares), subject to providing the findings of the giant gecko surveys. This will allow DWER to impose appropriate, well informed management conditions as required, should the survey findings indicate that a significant impact to giant geckos would occur through clearing the larger area proposed.

The applicant is also required to obtain a section 13 permit under the EPBC Act to kill, injure or take threatened fauna listed under the EPBC Act, which may be subject to conditions.

Red footed booby (*Sula sula*)

The Red-footed booby is not conservation listed under the BC Act or EPBC Act, however it has been identified as a 'conservation value' in the Commonwealth North-west Marine Region, as set out in the Commonwealth North-west Marine Bioregional Plan (Commonwealth of Australia, 2012).

The red-footed booby nests in any vegetation dense enough to provide support and expansive enough to accommodate a colony. This includes forest canopy, shrubs, or, on cays, with low cover of shrubs, herbs and grasses. Individuals prefer inner parts of vegetated areas rather than edges (Marchant & Higgins, 1990).

This species was identified nesting within two of the application areas, ML100 East MB5 and ML133A STP9B (CIP, 2024).

Key threats to this species include habitat changes on breeding islands resulting from clearing of vegetation for mining, settlement, crops and coconut plantations, and effects of dust from mining operations. Such disturbances have led to birds abandoning former breeding areas on Christmas Island and Cocos-Keeling Islands (Marchant & Higgins 1990).

Noting the presence of nesting individuals within the application area, the proposed clearing will result in the loss of significant habitat for this species and may have the effect of causing injury to nesting birds or result in nesting birds abandoning nests, through direct disturbance or noise impacts.

The provision of a 50-metre avoidance buffer around any nesting birds would reduce the risk of impact to this species. The vegetation within the application areas that does not include current nesting habitat for this species is unlikely to constitute significant habitat, noting the extent of higher quality nesting habitat that occurs within the surrounding Christmas Island National Park.

Christmas Island flying fox (*Pteropus melanotus natalis*)

This mammal is endemic to Christmas Island and listed as Critically Endangered under the EPBC Act. It roosts on the island's coastal terraces or close to the first inland cliff in semi-deciduous forest with varying structural features

(Todd, 2019). The roosts are very close to the coast, thought to allow this species to use onshore winds to facilitate take-off (Commonwealth of Australia, 2013a). *Pteropus* species show high fidelity to roosts (Todd, 2019).

This species forages across the island, feeding on the fruits and flowers of more than 30 different plant species, from rainforests, gardens, and post-mine revegetation sites (where this contains trees and shrubs). The species is thought to have a relatively large foraging range of more than 6 kilometres from roosts (Todd, 2019).

There are 4 application areas that occur on or adjacent to the coastal terraces, being 100-EastMB5 (1.47 hectares), 132-MB4 (2.9 hectares), 132-MB5 (2.58 hectares) and 132-MB6 (4.6 hectares). These application areas are not located within one kilometre of any of the currently known maternity or major roosts of this species.

The survey did not identify any evidence of roosting by the above species within or adjacent to the application areas (CIP, 2024).

Given the above, the proposed clearing is not likely to impact on roosting individuals or significant roosting habitat.

While the proposed clearing will impact on suitable foraging habitat for this species, this impact is not likely to be significant given the extent of foraging habitat within the surrounding primary rainforest, much of which is within Christmas Island National Park.

The undertaking of slow, one directional clearing would help to minimise the risk of fauna strike to this species should it be foraging within the application areas at the time of clearing.

Other Species

The application areas also include suitable habitat for the below conservation listed species:

- Christmas Island emerald dove (*Chalcophaps indica natalis*) (EN; EPBC Act)
- Christmas Island goshawk (*Accipiter hiogaster natalis*) (EN; EPBC Act)
- Christmas Island hawk-owl (*Ninox natalis*) (Vulnerable); EPBC Act)
- Christmas Island thrush (*Turdus poliocephalus erythropleurus*) (EN; EPBC Act)
- golden bosunbird (*Phaethon lepturus fulvus*) (EN; EPBC Act)

The survey did not identify any evidence of nesting by the above species within or adjacent to the application areas (CIP, 2024). The application areas are unlikely to provide significant habitat for these species, and it is considered there is a low risk of the above species using the application areas for nesting. This is noting the modified habitat present within the application areas, known ecology of the above species (Commonwealth of Australia 2013, 2014, 2014a, 2016, 2016a), survey findings, predicted distribution model data, and availability of nesting habitat with nearby primary rainforest and surrounds. Regarding the availability of suitable nesting habitat, Christmas Island is 75% vegetated (comprising 10,125 hectares) of which 84% (8,505 hectares) occurs in Christmas Island National Park.

The above species are highly mobile and are unlikely to be at risk of fauna strike, noting the low risk of nesting birds within the application area and that slow progressive one directional clearing is proposed.

In the unlikely event of any nesting threatened birds using the application areas at the time of clearing, the Delegated Officer had regard for the applicant's requirement to obtain a permit under Section 13 of the EPBC Act (which may be subject to specific conditions as appropriate) to kill, injure or take EPBC Act listed threatened species.

Conclusion

The proposed clearing will impact on critical habitat for Abbott's booby, noting it occurs within 200 metres of previously recorded Abbott's booby nest sites. The Delegated Officer considers that the expected extent of impact to critical habitat for Abbott's booby under this proposed amendment is not a significant residual impact. This is noting the conditional requirements imposed on the amended permit (see below), modified condition of the application areas, site context, lack of current nesting use observed within or adjacent to the application areas (CIP, 2024), and extent of high value nesting habitat protected within Christmas Island National Park (8,505 hectares), where most known nesting habitat occurs.

The Delegated Officer also had regard to the conservation levy which the applicant is required to pay into under its mining lease, used to fund the revegetation of high priority areas relinquished by the applicant post mining. The

revegetation is coordinated through the CIMFR Program (See section 3.1). High priority areas include areas closest to Abbott's booby nest sites.

However, the proposed clearing has the potential to indirectly impact on nesting Abbotts booby individuals and their nesting habitat through wind turbulence (associated with the 110-STP20J application area), noise and edge effects.

The application areas also provide significant habitat for the non-conservation listed red-footed booby and red crab, noting that application areas ML100 East MB5 and ML133A STP9B include red-footed booby nests, and application areas 110-STP20J, 110-STP20KA, 110-STP20R and 110-STP20Q form part of an important red crab migration route. The proposed clearing has the potential to impact on these species, and the robber crab and giant gecko, through fauna strike.

Management actions are required to address the above impacts to fauna, as set out below.

The application areas also provide suitable habitat for other conservation listed fauna. However, this habitat is unlikely to be significant noting:

- the application areas have been historically cleared, are largely in a very good to completely degraded condition, and do not contain primary rainforest
- the application areas comprise around 2.1% of the total vegetated area of Christmas Island, much of which is protected within Christmas Island National Park and comprises higher quality fauna habitat in the form of primary and secondary forest
- no conservation listed fauna were identified within the application areas during the survey (CIP, 2024).

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- undertake pre-clearance searches for Abbott's booby nests, in suitable habitat within 100 metres of the application area, and maintain a 50-metre avoidance buffer around any Abbott's booby nests identified
- undertake site preparation works to facilitate timely future rehabilitation where clearing occurs within 100 metres of an Abbott's booby nest, to minimise the long-term risk of edge effects
- not clear tall regrowth vegetation in the 110-STP20J application area, within 100 metres upwind of a historically recorded Abbotts booby nest sites, to reduce wind turbulence
- undertake pre-clearance searches within suitable habitat for red-footed booby nests within 50 metres of authorised clearing areas 100-EastMB5 and 133A-STP9B, shown in figures 2 and 4 (where this species was previously identified), and maintain a 50-metre avoidance buffer around any red-footed booby nests identified
- undertake staged clearing and rehabilitation site preparation for the areas shown in Figure 15, to minimise clearing impacts on a red crab migration route (staged clearing schedule shown in Figure 17). These actions will also have the effect of minimising long-term wind turbulence impacts to Abbotts booby nest sites
- clear no more than 30 hectares within 18 months of the amendment being granted and seek approval from DWER's CEO prior to clearing the remaining areas up to the 219.69 hectares proposed, to allow DWER to consider island wide giant gecko survey findings (in progress), and manage through conditions (if necessary), any realised significant impacts to individuals from fauna strike associated with the larger clearing
- engage a fauna spotter to remove (if necessary) and relocate robber crabs from the application area ahead of clearing
- undertake slow progressive one directional clearing to allow fauna to disperse ahead of clearing
- not undertake clearing during night-time hours
- undertake weed management activities in accordance with the applicants approved EMP
- demarcate the proposed clearing areas prior to clearing and avoid all primary rainforest
- liaise with Parks Australia to implement management measures to minimise crab mortality, prior to clearing during the red crab migration period
- return areas cleared for stockpile access to natural ground level within six months of clearing within 50 metres of the Christmas Island National Park to facilitate revegetation and limit edge effects.

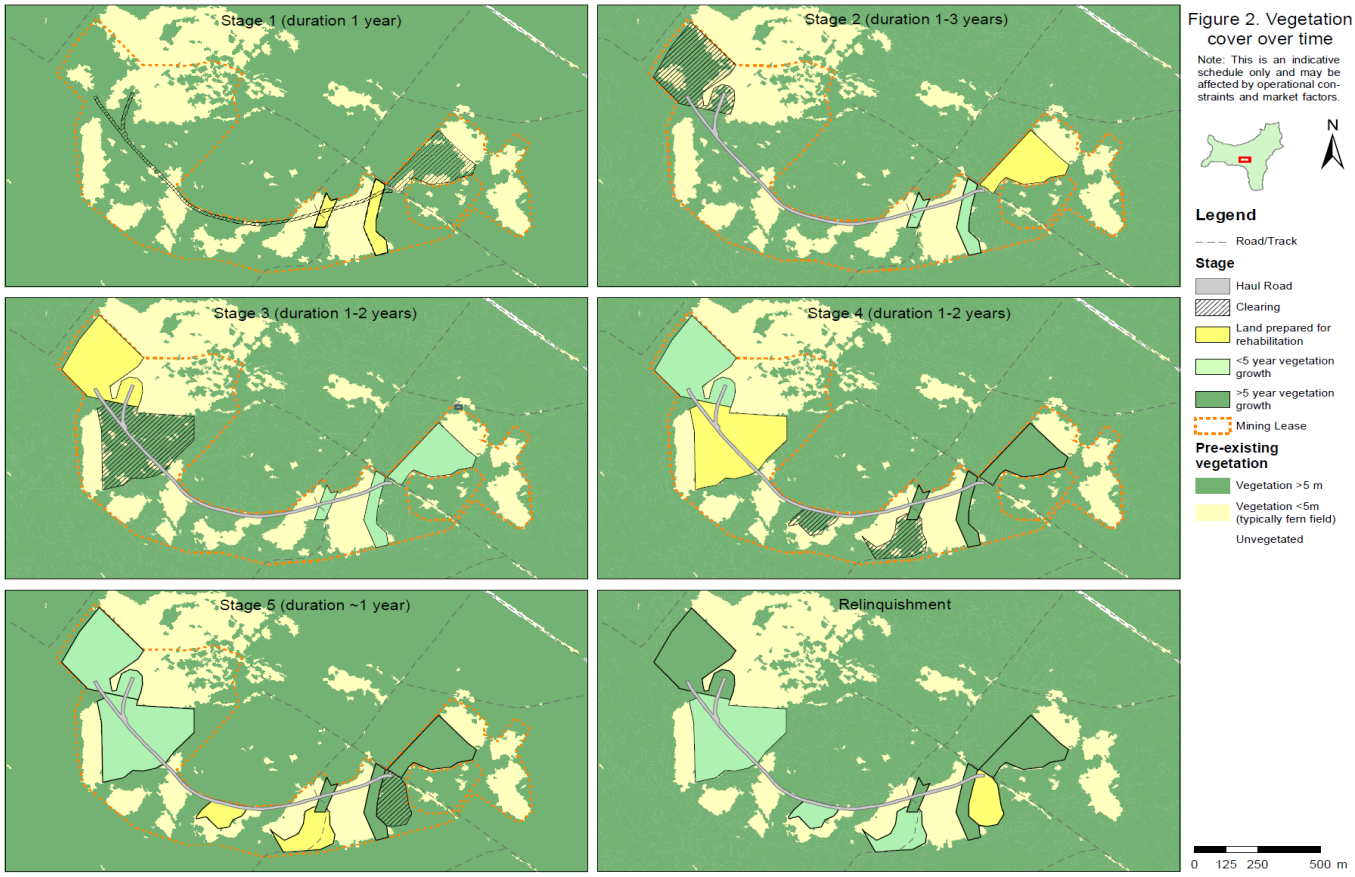

Figure 17. Staged clearing and mining schedule for areas 110-STP20J, 110-STP20KA, 110-STP20R and 110-STP20Q.

3.2.2. Conservation Areas - Clearing Principle (h)

Assessment

Christmas Island National Park

Christmas Island National Park covers about 64 per cent of Christmas Island and part of the islands marine zone. The National Park was established to conserve the primary rainforest on Christmas Island, endemic flora and fauna, nesting colonies of seabirds, land crab populations, fringing coral reefs, significant cave systems and Ramsar wetlands (Director of National Parks, 2014).

Potential threats to the terrestrial vegetation within the National Park include the risk of new invasive species arriving and establishing on the island, and the spread of existing shade tolerant weed species spreading into the National Park (Director of National Parks, 2014).

The application areas are confined to the Mining Lease boundary which do not include areas of National Park. However, 10 of the 64 application areas are within 20 metres of the National Park, some encroaching within 3 metres. The clearing of these areas may result in the introduction and spread of weeds into the National Park, without appropriate management.

The applicant has committed to maintaining a minimum 5-metre buffer around the National Park (CIP, 2024). The applicant has advised that the buffer would protect up to the drip line beneath adjacent canopy trees and prevents root damage or compaction of bordering vegetation (Range to Reef, 2014).

Additional information provided to support a previous CIP clearing permit application (being CPS 6323/1) noted that the above 5-metre buffer is adequate to minimise direct and indirect impacts to the National Park as weeds on Christmas Island struggle to proliferate within the primary rainforest due to low light and consumption by red crabs (Range to Reef, 2014). Potential weeds of intact rainforest must possess two key traits: the ability to establish and grow under heavy shade, and the ability of both seeds and seedlings to tolerate, evade, or resist consumption by red crabs (Green et al., 2003). Most weeds on Christmas Island do not have these key traits (i.e *Leucaena* and Jamaican

cherry). There are however some shade tolerant weed species which require appropriate management. This is reflected in the Christmas Island National Park Management Plan which states that most introduced flora species have not invaded undisturbed rainforest vegetation, except for *Clausena excavata*, *Delonix regia* and *Aleurites moluccana* (Director of National Parks, 2014).

The applicant also maintains a maximum 30-degree gradient to the edge of mined areas, which prevents an abrupt vertical cut-off at the edge of the mining areas adjacent to native vegetation.

The applicant has committed to weed management measures as set out in its EMP, which it is required to comply with under its mining lease. These measures include (PRL, 2017):

- undertake a program of weed control on priority weed species
- undertake annual weed monitoring of areas disturbed by the applicant
- maintain a record of priority weed species and locations identified in the applicant's mining tenement
- develop an annual program of weed monitoring and control
- maintain a weed management schedule for priority weed species and priority weed infestation areas
- maintain a record of weed monitoring and control activities
- work collaboratively with Parks Australia to address weed management of other introduced flora species adjacent to National Park if adequate resources are available.

The Delegated Officer therefore considered that a 5-metre buffer to the National Park was appropriate in this instance, noting:

- many weeds on Christmas Island cannot survive in primary rainforest due to low light and consumption by crabs except for shade tolerant weed species which can be appropriately managed
- weed management measures will be required as a condition of the permit
- the applicant maintains a maximum gradient of 30 degrees to the mining area edge
- the existing high weed load within several of the application areas which do little to buffer weed ingress in their current state.

Ramsar Sites – Dales and Hosnies Spring

The 140-MB2 and 125-STP10H application areas are within 20 metres of the mapped Dales and Hosnies Spring Ramsar site boundaries, respectively. These Ramsar sites were recognised for their high conservation values given collectively they support a variety of wetland species, communities and fauna habitats including marine, terrestrial and freshwater dependant species (Butcher & Hale, 2010; Hale & Butcher, 2010). The boundary of these Ramsar sites mimics the boundary of the National Park in these locations.

Key threats to these Ramsar wetlands include groundwater extraction, invasive yellow crazy ants, increased disturbance from recreation, and climate change.

Phosphate mining on Christmas Island does not intercept groundwater and therefore impacts to groundwater are unlikely from the proposed clearing.

The Dales Ramsar site covers an area of around 580 hectares and comprises a system of seven watercourses known as 'The Dales' (Butcher & Hale, 2010). Three of the Dales support permanent springs, and all support intermittent streams during the wet season (Butcher & Hale, 2010). The 140-MB2 application area is adjacent to the broader mapped Dales Ramsar boundary and is around 180 metres from the closest Dales watercourse, which is a permanent spring. 140-MB2 includes 0.57 hectares of vegetation in a degraded to completely degraded condition (CIP, 2024).

The proposed clearing of the 140-MB2 application area is not likely to exacerbate weed spread into the adjacent Dales Ramsar site, given this area is highly degraded with an existing high weed load and has been previously extensively mined. There is a small risk that the proposed linear clearing of degraded vegetation in this area could impact surface water quality given the distance to the closest Dales watercourse. This small risk can be adequately managed through appropriate drainage management conditions on the clearing permit.

Hosnies Spring is a permanent, shallow freshwater wetland, fed by a natural spring system located about 120 metres inland of the seaward cliff (Hale & Butcher, 2010). In 2010, the boundaries of the mapped Ramsar site were

expanded from 0.33 hectares (including just the spring itself) to 202 hectares (Hale & Butcher, 2010). This expansion gave greater protection to the ancient mangrove stands associated with the spring, and includes large areas of primary rainforest, matching the National Park boundary on the eastern side of Christmas Island (Hale & Butcher, 2010). The 125-STP10H application area is 16 metres from the Hosnies Spring boundary, separated by primary rainforest, and about 1.1 kilometres from the natural spring.

Surface water quality impacts to Hosnies Spring from the proposed clearing of the 125-STP10H application area are a low risk, given the distance to the spring system and dense primary rainforest that exists between this application area and the spring. The proposed clearing nearby this area may however increase the risk of weeds spreading into the Hosnies Ramsar site. The Delegated Officer considers that the EMP weed management measures noted above will adequately manage this risk.

Conclusion

The proposed clearing will not directly impact on vegetation within the National Park or Ramsar sites, however it may result in the introduction and spread of weeds into these areas without appropriate management. The clearing of application area 140-MB2 also poses a small risk of surface water quality impacts to the Dales.

Conditions

To address the potential risk of indirect impacts to the National Park and Ramsar sites, the following management measures will be required as conditions on the clearing permit:

- maintain a minimum buffer of five metres to the Christmas Island National Park and the Ramsar sites
- undertake weed hygiene measures for machinery entering and leaving the proposed clearing areas
- undertake weed management activities in accordance with the weed management commitments set out in the EMP
- return areas cleared for stockpile access to natural ground level within six months of clearing within 50 metres of the Christmas Island National Park to facilitate revegetation and limit edge effects.
- drainage management to prevent the inadvertent discharge of sediment into The Dales wetland.

3.2.3. Threatened flora - Clearing Principles (a) and (c)

Three threatened flora species (under the EPBC Act) are known to occur on Christmas Island:

- *Asplenium listeri* (Christmas Island spleenwort) (critically endangered) – occurs in limestone rock crevices in dry exposed areas. Habitat critical to this species includes all limestone rock crevices nearby known occurrences and taller vegetation on the island side of cliff-top sites.
- *Pneumatopteris truncata* (Christmas Island fern) (critically endangered) – is known from only two localities on the southwest side of the island where it occurs on permanently moist sites associated with groundwater seepage in semi-deciduous closed forest.
- *Tectaria devexa var. minor* (cave fern) (endangered) – occurs mainly on the plateau in primary rainforest (tall and largely undisturbed) above 80 metres elevation. Habitat critical to this species survival includes all areas within 50 metres of the area occupied by the species.

(Butz, 2004; Butz, 2004a; CIP, 2024; Commonwealth of Australia 2014b).

The closest known threatened flora record to the application area is *Tectaria devexa* var. minor located around 15 metres from the 100-SPWMB1 application area, on the opposite side of a minor road within primary rainforest. The next closest application area to a known *Tectaria devexa* var. minor location is the 101-MB3 application area, which is about 100 metres away. No other application area occurs nearby (within 250 metres) this species.

The reconnaissance survey undertaken by Christmas Island Environmental Services (CIP, 2024), did not identify any of the above species.

Application area 101-MB3 is in a completely degraded condition and does not provide suitable habitat for *Tectaria devexa* var. minor, it is therefore unlikely to contain any records of this species. Given the distance of this application area to *Tectaria devexa* var. minor, indirect impacts from clearing this completely degraded site are also unlikely.

Noting that the known locations of *Tectaria devexa* var. minor were recorded within primary rainforest on the opposite side of a significant road to 100-SPWMB1, the proposed clearing of this area is unlikely to impact (either

directly or indirectly) any previously recorded occurrences. However, there is some potential for this species to occur within this application area, given its proximity to known records, and that it includes taller, medium density regrowth in a good condition (CIP, 2024). Measures to undertake a pre-clearance search and avoid this species with appropriate buffers if found, would assist in minimising impacts to this species.

The application areas do not provide suitable habitat for *Pneumatopteris truncata* and *Asplenium listeri* (CIP, 2024), and neither species has been recorded within 200 metres of the application areas. Predictive distribution mapping also indicates that these species are unlikely to occur within the application areas. Noting this, the proposed clearing is unlikely to impact on these species. It is acknowledged that the previous clearing permit, being CPS 3290/3, included a condition to require minimum avoidance buffers to occurrences of these species. However, given the above, the Delegated Officer considered it unnecessary to reinstate this conditional requirement.

Conclusion

The proposed clearing of the 100-SPWMB1 application area may impact on suitable habitat for *Tectaria devexa* var. minor. Therefore, management actions are required to address potential impacts to this species. The proposed clearing is not likely to impact on *Asplenium listeri* or *Pneumatopteris truncata*.

Conditions

To address the above impacts, as a condition on the permit the applicant will be required to undertake a pre-clearance search of suitable habitat within the 100-SPWMB1 application area for *Tectaria devexa* var. minor, and maintain a minimum avoidance buffer of (unless otherwise approved by the CEO):

- 10 metres to all known locations
- 50 metres to known locations where the vegetation proposed for clearing is contiguous with the vegetation comprising *Tectaria devexa* var. minor.

3.3. Relevant planning instruments and other matters

The applicant operates phosphate mining, processing and shipping operations from Christmas Island over approximately 1636 hectares of the island (CIP, 2024). The applicant was issued a Mining Lease (MCI 70/1A) on 4 August 1997, under the *Mining Act 1978* (WA). In 2013, the lease was extended until 2034. All applications areas are contained within the approved mining lease.

The EPBC Act applies on Christmas Island. Mining was approved within MCI 70/1A in 1997 under the former *Environment Protection (Impact of Proposals) Act 1974*.

Under conditions of the mining lease, no primary rainforest can be cleared for mining operations and the applicant must comply with the requirements of its Commonwealth approved Environmental Management Plan (EMP) (2018 – 2023) (PRL, 2017). The applicant notes that the 2024 to 2029 management plan is in the process of being formalised, for approval by the Commonwealth.

The EMP sets out that the applicant will undertake the following management actions for mining areas (amongst others) (PRL, 2017):

- undertake mine site planning (i.e. an Erosion Control Plan) for all clearing operations to identify potential erosion potential and mitigation strategies
- realign exploration tracks and install temporary drainage systems to minimise erosion potential by directing stormwater into appropriate off-site locations
- implement mitigation measures as appropriate to minimise erosion which may include:
    - diversion of flow into pinnacle or natural areas as feasible to prevent sediment transport and erosion
    - use of vegetative buffer zones in mine areas
    - loosening of compacted soil prior to leaving site
    - construction of earth dykes (bund drains) and earth swales (v drains) for onsite water conveyance
    - construction of erosion works to retain stormwater on site longer and to reduce sediment content and erosion potential of water leaving site
    - continuous monitoring and maintenance of on-site drainage and erosion works
    - containing all runoff from ROM pads in sediment control structures

- monitor cleared areas, with review of runoff and erosion pattern, in accordance with the erosion monitoring procedure, and identify and implement remedial works as required
- investigate opportunities for topsoil retention in use on mine sites.

Under the mining lease the applicant must also:

- implement a dust suppression program
- maintain stockpile access of a certain volume to Park Australia for its rehabilitation works
- prepare a relinquishment schedule for Commonwealth approval, for relinquishment of mined areas post mining
- make safe all areas mined, to the satisfaction of the Department of Mines, Petroleum and Exploration
- pay a conservation levy to the Commonwealth to be used for the rehabilitation of high priority relinquished mining lease areas on Christmas Island, and other high priority conservation activities on Christmas Island.

The applicant has a DWER issued prescribed premises licence issued under Part V of the EP Act, for the control and abatement of pollution from the loading and unloading activities and processing activities (beneficiation of metallic or non-metallic ore) on Christmas Island.

The Shire of Christmas Island was notified of the amendment application and did not provide comment. Local government approvals are not required for the proposed mining operation.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	Christmas Island retains approximately 75 per cent native vegetation, of which 84 per cent (64 per cent of total island area) is protected within the Christmas Island National Park. The 219.69 hectares of vegetation proposed for clearing occurs within 64 application areas and is largely surrounded by intact primary rainforest. The application areas have previously been cleared for phosphate mining.
Ecological linkage	The application areas do not form part of a known ecological linkage.
Conservation areas	Several of the application areas are within 50 metres of Christmas Island National Park. None of the application areas encroach on the National Park.
Vegetation description	Christmas Island was subject to an island wide vegetation mapping project between 2011 and 2014 (Geoscience Australia, 2014). The project largely mapped the application areas as: • Fern field – comprising expanse of low-lying ferns (typically *Nephrolepis biserrata)* often growing on limestone pinnacles • Mixed weed and pioneer species – regrowth vegetation with a mean tree height of less than 5 metres, typically containing a higher proportion of weeds than the below 'Regrowth' category • Regrowth – generally well-developed regrowth over 5 metres mean tree height, which may include weed species. All areas proposed for clearing have been previously cleared and contain varying extents of regrowth vegetation (CIP, 2024). A summary of the survey information indicates that the application areas largely comprise (CIP, 2024): • areas dominated by *Nephrolepis biserrata* fernland • areas dominated by weed species such as *Leucaena leucocephala* **Cordia curassavica* and **Clausena excavata* • areas cleared in the past 10 years with vegetation regeneration comprising native and weed species. Native species include *Macaranga tanarius* shrubland/woodland • areas with secondary well-developed regrowth more than 5m high and may be up to 35 metres high. Commonly include *Macaranga tanarius*, *Arenga listeri, Pandanus elatus, Barringtonia racemosa, Arenga listeri, Dysoxylum gaudichaudianum, Syzygium nervosum,* and *Planchonella nitida*, which may form open or closed forest. A summary of the vegetation type based on a ground truthing reconnaissance survey undertaken by Christmas Island Environmental Services in 2023, is publicly available within Table 4 of the 'Supporting Document for Amendment to CPS 4506/3' (labelled 'CPS 4506-1 – Supporting Information') (CIP, 2024). Recent photographs of the vegetation within the application areas undertaken as part of the reconnaissance survey is publicly available within the document titled 'Appendix I Field Site Photos, Waypoints, and Condition Survey Score' (labelled 'CPS 4506-4 - Supporting Information – Photographs) (CIP, 2024).
Vegetation condition	Photographs and the reconnaissance survey supplied by the applicant (CIP, 2024) indicate that the vegetation within the application areas range from excellent to completely degraded (Keighery, 1994) condition, with the majority in a very good to completely degraded condition. Those areas in excellent condition are confined to the ML100-EastMB5 (portion of the 1.47 ha proposed to clear), ML102-STP13B (portion of the 4.72 ha proposed to clear), ML122-STP11E (portion of the 2.19 ha proposed to clear. The full Keighery (1994) condition rating scale is provided in Appendix C.

Characteristic	Details
	The specific vegetation condition of each application area based on the reconnaissance survey is publicly available within Table 5 of the 'Supporting Document for Amendment to CPS 4506/3', see 'Vegetation Description' link above ' (CIP, 2024).
Climate and landform	Christmas Island is the summit of a submarine mountain. It rises steeply to a central plateau dominated by stands of rainforest. The plateau reaches heights of up to 361 metres and consists mainly of limestone with layers of volcanic rock. The Island's 80-kilometre coastline is an almost continuous sea cliff, ranging in height to 20 metres. Christmas Island has a tropical monsoonal climate with a distinct wet season occurring from December to April. The average rainfall is about 2,000 millimetres per annum.
Soil description	Christmas Island comprises a layer of phosphate-rich soil covering limestone, often existing as limestone pinnacles beneath the surface soil profile. Marine sediments and guano deposition have formed the Island's phosphatic soils.
Land degradation risk	Christmas Island soils are generally highly permeable and there is little runoff, water or wind erosion. During the wet season runoff can occur during heavy rainfall causing some risk of soil erosion and sedimentation, however this is usually short lived.
Waterbodies	Perennial surface water on Christmas Island is limited to spring fed streams on coastal or sloping areas of the Island. Such areas are confined to Hosnies Spring and The Dales wetland areas, which are both listed as Ramsar wetlands and are listed in the Directory of Important Wetlands in Australia. The closest mapped wetland or watercourse to the application areas is 'The Dales' Ramsar wetland which is partly adjacent to application area 140-MB2. The Hosnies Spring Ramsar wetland boundary is 16 metres from the 125-STP10H application area. The Dales comprise 7 watercourses, of which the closest is around 180 metres from 140-MB2. The Hosnies Spring is around 1.1 kilometres from 125-STP10H.
Flora	Christmas Island is home to 242 native plant species, including 18 endemic species. Three threatened flora species (under the EPBC Act) are known from Christmas Island. These are *Asplenium listeri, Tectaria devexa* var. *minor* and *Pneumatopteris truncata.* These species have not been previously recorded within the application areas. The closest record of these species to the application area is *Tectaria devexa* var. *minor,* recorded around 15 metres from the 100-SPWMB1 application area, on the opposite side of a minor road. Two priority flora species are known to occur on Christmas Island, both listed as Priority 1 by DBCA; *Clerodendrum inerme* and *Acalypha lanceolata* var. *lanceolata.* These species have not been previously recorded within the application areas. The closest record of these species to the application area is *Acalypha lanceolata* var. *lanceolata* recorded around 500 metres from the application area.
Ecological community	No threatened or priority ecological communities occur on Christmas Island.
Fauna	Christmas Island provides habitat for 14 land bird species and nine seabird species. Four seabird and nine land bird species are endemic to the island. A further 108 migratory or vagrant bird species have been recorded on the island. Six of the island's endemic birds are listed as threatened under the EPBC Act. One endemic native mammal, the Christmas Island flying fox and five endemic reptiles, also occur on Christmas Island. Christmas Island also supports 20 crab species with three species locally significant, being the red, robber and blue crabs. The giant gecko and Abbott's booby have both historically been recorded within the application area. The applicant has confirmed via a reconnaissance survey that no nest sites for the Abbott's booby currently occur in any of the application areas (CIP, 2024). The red-footed booby was also identified nesting in 2 application areas (CIP, 2024). The fauna species that may occur in the application areas are listed in Section A.2 below.

A.2. Fauna Analysis Table

With consideration of the site characteristics set out above, relevant datasets (see Appendix D), and biological survey information, the following conservation significant fauna species may occur within the application area.

Species name	Conservation status	Suitable habitat features? [Y/N]=	Identified within the application area? [Y/N]
Abbott's Booby (*Papasula abbotti*)	Endangered; EPBC Act	Y	Y – historical records, not identified in ground truthing
Christmas Island emerald dove (*Chalcophaps indica natalis*)	Endangered; EPBC Act	Y	N
Christmas Island flying fox (*Pteropus melanotus natalis*)	Critically endangered; EPBC Act	Y – foraging (no roost sites)	N
Christmas Island frigatebird (*Fregata andrewsi*)	Endangered; EPBC Act	N – not within the know breeding areas on the terrace forests	N
Christmas Island Goshawk (*Accipiter fasciatus natalis*)	Endangered; EPBC Act	Y	N
Giant Gecko (*Cyrtodactylus sadleiri*)	Endangered; EPBC Act	Y	Y – historical records, not identified in ground truthing
Christmas Island hawk-owl (*Ninox natalis*)	Vulnerable; EPBC Act	Y	N
Christmas Island Thrush (*Turdus poliocephalus erythropleurus*)	Endangered; EPBC Act	Y	N
Golden bosunbird (*Phaethon lepturus fulvus*)	Endangered; EPBC Act	Y	N
Red Crab (*Gecarcoidea natalis*)	Not conservation listed (keystone species)	Y	Y
Red-footed booby (*Sula sula*)	Not conservation listed (recognised as a conservation value in the Commonwealth Northwest Marine Bioregional Plan)	Y	Y – nesting
Robber Crab *(Birgus latro*)	Not conservation listed	Y	Y

A.3. Flora analysis table

There are three threatened flora species and two priority flora species known from Christmas Island, as shown below.

Species name	Conservation status	Suitable habitat present? [Y/N/Potential]
Tectaria devexa var. minor	Endangered; EPBC Act	Potential
Asplenium listeri	Critically endangered; EPBC Act	N

Species name	Conservation status	Suitable habitat present? [Y/N/Potential]
Pneumatopteris truncata	Critically endangered; EPBC Act	N
Clerodendrum inerme	Priority 1; listed by DBCA	N
Acalypha lanceolata var. *lanceolata*	Priority 1; listed by DBCA	N

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): ***"Native vegetation should not be cleared if it comprises a high level of biodiversity."*** Assessment: All sites proposed for clearing have been previously cleared and contain regrowth vegetation, which ranges from excellent to completely degraded (Keighery, 1994) condition, with the majority in very good to completely degraded condition. The applicant has committed to not disturbing any primary rainforest or areas within the Christmas Island National Park. No conservation listed fauna under the EPBC Act were identified within the application area (CIP, 2024). However, the application area includes critical habitat for Abbott's booby given the proximity to historical nest sites, and may contain suitable nesting habitat for this species. The application area also includes vegetation that contributes to an important migration route for red crabs. While no threatened flora has previously been recorded in the application areas, area 100-SPWMB1 may include suitable habitat for *Tectaria devexa* var. minor, given its proximity to known records. Given the above, the proposed clearing may be at variance to this principle. Management measures have been conditioned on the clearing permit to address these impacts, as assessed and set out under sections 3.2.1 and 3.2.3.	May be at variance	No
Principle (b): ***"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."*** Assessment: The application areas contain habitat for conservation significant fauna, including significant habitat. Impacts to these species require management and are assessed in detail under Section 3.2.1.	At variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): ***"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."*** Assessment: Three threatened flora species (under the EPBC Act) are known to occur on Christmas Island, being *Asplenium listeri*, *Pneumatopteris truncata* and *Tectaria devexa* var. minor. The proposed clearing is not likely to impact on occurrences of, or suitable habitat for *Asplenium listeri* or *Pneumatopteris truncata,* however may impact on suitable habitat for *Tectaria devexa var. minor* noting the proximity of known records of this	May be at variance	Yes *Refer to Section 3.2.3, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
species to the 100-SPWMB1 application area. Potential impacts to this species are detailed under Section 3.2.3.		
Principle (d): ***"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."*** Assessment: No threatened ecological communities have been recorded on Christmas Island.	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): ***"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."*** Assessment: The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30% of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Christmas Island retains around 75% native vegetation (10,125 hectares) of which 84% (64% of the total island area) is protected within the Christmas Island National Park. The proposed clearing equates to the loss of around 2.1% of the total remaining vegetation on Christmas Island. The extent of native vegetation on Christmas Island is therefore consistent with the national objectives and targets for biodiversity conservation in Australia.	Not likely to be at variance	No
Principle (h): ***"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."*** Assessment: Several of the application areas are within 20 metres of Christmas Island National Park and two application areas are adjacent to the Dales and Hosnies Spring Ramsar sites, respectively. Impacts to these conservation areas are assessed in detail under Section 3.2.2.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Environmental value: land and water resources		
Principle (f): ***"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."*** Assessment: The 140-MB2 application area (for exploration) is largely adjacent to the mapped Dales Ramsar site boundary. This Ramsar site covers 580 hectares and comprises a system of seven watercourses. At its closest point, application area 140-MB2 is 180 metres from the closest watercourse (permanent spring). The 125-STP10H application area is 16 metres from the mapped Hosnies Spring Ramsar site boundary. The boundary of this wetland incorporates extensive areas of primary rainforest surrounding the spring. The Spring itself is around 1.1 kilometres from 125-STP10H. The reconnaissance survey did not identify riparian vegetation within the application areas (CIP, 2024). Noting the distance of the application areas to the closest permanent or perennial springs, the proposed clearing is not likely to directly impact on any riparian vegetation Indirect impacts to the Ramsar sites are discussed in detail under Section 3.2.2.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (g): ***"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."*** Assessment: The phosphatic soils within the application area are not typically prone to wind erosion. Around 70 per cent of the island's annual rainfall is taken up by its flora. The remaining infiltrates through the soil to recharge groundwater (CIP, 2024). The soil and underlying limestone rock on the island is very porous and there is minimal runoff except during torrential wet season downpours. Infiltration tests indicate that soil infiltration rates are typically substantially higher than hourly rainfall intensities. Therefore, the risk of water erosion, waterlogging and sedimentation is mostly localised to compacted areas such as roads and stockpile pads during high rainfall. Therefore, the proposed clearing has a low risk of resulting in water erosion, wind erosion or waterlogging The Delegated Officer also considered the erosion control measures that are set out in the applicant EMP (see Section 3.3), and the requirement for the applicant to make mine areas safe post relinquishment (levelling) and to return cleared stockpiles to natural ground level (as a condition of the clearing permit). Noting the above, the proposed clearing is not likely to result in appreciable land degradation	Not likely to be at variance	No
Principle (i): ***"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."*** Assessment: The 140-MB2 application area is largely adjacent to the mapped Dales Ramsar site boundary. This application area is around 180 metres from the closest Dales watercourse, which is a permanent spring and represents the closest watercourse to any of the application areas. Due to the high natural rate of infiltration on Christmas Island, there is limited surface drainage, and erosion and sedimentation is generally localised to compacted areas such as roads and stockpiles. Noting the distance to the nearest watercourse, and vegetative buffer that exists between the 140-MB2 application area and the permanent Dales spring, the proposed clearing is unlikely to impact on the quality of surface water within the Dales. This is also noting the 140-MB2 application area comprises fern fields in a degraded to completely degraded (Keighery, 1994) condition (CIP, 2024). As a precautionary measure, the applicant will be required to ensure that sediments are not discharged from the application area into the Dales Ramsar site, as a condition of the clearing permit. The Delegated Officer also considered the erosion control measures that are set out in the applicant EMP (see Section 3.3), the requirement for the applicant to make mine areas safe post relinquishment (levelling) and to return cleared stockpiles to natural ground level (as a condition of the permit). Groundwater extraction is a major threat to the Ramsar sites (Butcher & Hale, 2010). Phosphate mining on Christmas Island does not intercept groundwater. The proposed clearing is not likely to deteriorate the quality of groundwater noting the extent of surrounding vegetation and high groundwater infiltration rates.	Not likely to be at variance	No
Principle (j): ***"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."*** Assessment:	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
The proposed clearing is not likely to cause or exacerbate flooding noting the presence of highly permeable soils on Christmas Island, absence of watercourses within the application areas, and presence of extensive vegetation surrounding the application areas.		

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering the location of the application area, the scale below was used to measure the condition of the vegetation proposed to be cleared. The applicants reconnaissance survey notes that some allowances and minor modifications were made when applying the below scale given the unique tropical environment of Christmas Island. This scale has been extracted from:

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. GIS Databases and References

D.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Cadastre (LGATE-218)
- Contours (DPIRD-073)
- Environmentally Sensitive Areas (DWER-046)
- Imagery
- Ramsar Sites (DBCA-010)

Restricted GIS Databases used:

- Abbott Booby Nests (2012)
- Christmas Island Vegetation (2014)
- Compiled Abbott's Booby Nest Sites (2017)
- Known Giant Gecko locations (2015)
- Known Abbotts Booby Locations (2015)
- National Park Boundary
- RAMSAR Wetlands (2013)
- Red Crab Burrow Density Grid
- Red Crab Migration Infrastructure
- Red Crab Migration Fencing
- Tectaria devexa var minor (2015)
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Vegetation Level 1 (2013)

D.2. References

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